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AN APPLICATION OF THE TWO FACTOR THEORY OF SATISFACTION TO RECREATIONAL SETTINGS

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Experiment Station

Report submitted to
Forestry Sciences Laboratory
Intermountain Forest and Range Experiment Station
Missoula Montana

August 1982

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TABLE OF CONTENTS

VOLUME I

PREFACE 1

RESEARCH SUMMARY 3

THE PROBLEM 6

THE TWO FACTOR THEORY 10

APPLICATIONS TO RECREATIONAL SETTINGS 15

SUMMARY 29

STUDY METHODOLOGY 31

- Study Area 31
- The Questionnaire 32
  - OUTCOME DOMAINS 32
  - SOURCES OF SATISFACTION AND DISSATISFACTION 33
  - OVERALL MEASURE OF SATISFACTION 33
  - OTHER INFORMATION 34
- Sampling Procedure 34

RESULTS 36

- Generalized Tests of the Two Factor Theory 36
  - SUMMARY 40
- Outcome Domains and Setting Attributes 41

Closed-ended Question Responses 42

SUMMARY 49

Open-ended Question Responses 50

SUMMARY 58

Overall Measures of Satisfaction 60

DISCUSSION 63

LITERATURE CITED 69

VOLUME II

APPENDIX A: DATA TABLES

APPENDIX B: ITEMS COMPOSING OUTCOME DOMAIN SCALES

APPENDIX C: ITEMS COMPOSING CLASSIFIED ATTRIBUTES

APPENDIX D: QUESTIONNAIRE

APPENDIX E: SAMPLING PLAN

APPENDIX F: FOLLOWUP LETTER AND POSTCARD

PREFACE

This report summarizes research conducted in the Rattlesnake National Recreation Area and Wilderness supported in part by the Wilderness Management Research Unit at the Intermountain Forest and Range Experiment Station and the University of Montana School of Forestry. The research was directed at adapting and evaluating, in a tentative sense, Frederick Herzberg's Two Factor Theory of Satisfaction, developed for work settings, for wildland recreational environments.

Because the research was theoretical in scope, rather than pragmatic, the orientation of this report is the development and evaluation of concepts. Statistical analysis is focused toward generalized hypotheses of the adapted theory of recreational satisfaction. We have deliberately excluded standard descriptions of the study population in terms of socio-demographic characteristics. The interested reader can obtain this information if desired from the principal author.

Since the orientation is conceptual, we have also excluded discussions of management implications. The results presented here are still tentative and preliminary. Further full scale evaluation will lead to such

discussions.

The authors wish to thank Bob Lucas, Intermountain Forest and Range Experiment Station for his generous support in an era of shrinking budgets and for his belief that a different look at the concept of recreational satisfaction is warranted. The authors also extend their appreciation to Adrienne Corti, Graduate Research Assistant, School of Forestry for her willing assistance in data collection and analysis. Finally, the results presented herein would not be possible without the gracious cooperation of the many visitors to the Rattlesnake.

RESEARCH SUMMARY

Because of the extensive amount of data reported here a brief summary of the research direction and results are summarized. Readers desiring additional detail and depth may read the appropriate sections of the report.

Research Direction--

The research extended and reshaped Herzberg's Two Factor Theory of Satisfaction to recreational settings. Our extended version of the theory states (1) satisfaction and dissatisfaction are conceptually distinct and independent concepts; visitor evaluations of such are not psychometrically additive; (2) different attributes of the setting lead to feelings of satisfaction and dissatisfaction; (3) definitions of the experience influence which setting attributes are salient to the visitor's feeling of satisfaction; (4) intensity of dissatisfaction is assessed through the visitor's planned future behavioral or suggested management changes.

Study Methodology--

Day and overnight visitors leaving the Rattlesnake National Recreation Area and Wilderness were sampled in August and September, 1981. Qualifying visitors were given a

mail-return questionnaire concerning their trip to complete at home. A reminder postcard and full followup questionnaire were sent to non-respondents approximately 10-14 days apart. This resulted in a response rate of 82 percent for a total of 113 completed questionnaires.

Research Results--

About 40 percent of the sample reported holding both feelings of satisfaction and dissatisfaction about their visit--consistent with predictions of the theory. Scenery, lakes, streams, and wildlife were the most frequently mentioned sources of satisfaction in response to a closed-ended question. Meeting other similar or different types of recreationists, encountering litter and insects or dogs were the most frequently identified sources of dissatisfaction, although some of these attributes were also mentioned as sources of satisfaction.

In response to open-ended questions, scenery and solitude were the most frequently mentioned sources of satisfaction, while past management activities and encountering others (principally motorcyclists) were most frequently mentioned sources of dissatisfaction.

Sources of satisfaction and dissatisfaction

varied somewhat in relation to the importance of various outcome domains.

Indicated behavioral changes or management suggestions were many, but because of the small sample size could not be associated with specific sources of dissatisfaction or importance of various outcome domains.

In summary, many of the hypotheses were modestly supported by the data, especially at the more generalized level of the theory. More specific hypotheses with respect to the saliency propositions will have to await testing by more adequate data.

THE PROBLEM

The concept of satisfaction in recreation research and management has assumed a critical role in the past few years. More managers are becoming concerned that satisfactory recreational experiences are the primary objectives and outputs of management, that management actions may substantially impact the opportunity for satisfactory experiences, and that levels of visitor satisfaction may be useful tools in identifying and planning for a spectrum of recreational opportunities, as well as for evaluating the effectiveness of management programs.

Researchers, as they have developed a greater understanding of human behavior in recreational settings, have explored the concept and developed measures of it (cf. Dorfman 1979; Peterson 1974). However, researchers have learned that establishing the meaning of satisfaction is difficult, that measuring satisfaction in recreational settings is complex, and that satisfaction measures are frequently (and apparently) unrelated to components of recreational settings (Manning and Ciali 1980). There are a variety of reasons for each of these concerns. Respectively, these may include invalid definitions of the dimensionality of the concept; the use of single item scales, the reliability of which is difficult to establish;

and the lack of establishing saliency of the individual specific setting components. Of course, other problems have arisen. For example, a model of satisfaction developed in the industrial psychology literature may be incompletely or incorrectly specified when applied to recreational settings. In summary, more scientists have researched the concept of satisfaction, the more they've understood how complex it is.

Many approaches to measuring recreational satisfaction in the past have relied on theoretical constructs developed in the literature of industrial psychology to measure satisfaction in the work setting (Lawler 1973; Roggenbuck 1975). Assuming the validity of Lee's (1972) assertion that human behavior in recreational settings is structured by normative processes similar to those operative in other settings, it is appropriate to borrow and modify these models for recreational settings. Although such job satisfaction models were originally developed to identify factors in the work setting that could be manipulated to increase productivity, adopting these approaches to recreational settings may be useful because fundamental assumptions and processes regarding human behavior and motivation in both settings may be similar. For example, several work setting components leading to job satisfaction deal with intrinsic rewards, achievement and recognition potential, and challenge of the task--factors which are

similar to Levy's (1978) definition of recreational behavior which includes intrinsic rewards. Importantly, salary, which is commonly viewed as a major incentive and reward for successful job performance, is generally recognized in industrial psychology as providing little satisfaction and being the source of considerable dissatisfaction. Finally, many job enrichment programs include participatory management, working groups or teams, and manipulation of other work setting components; characteristics which are similar to Levy's second component of recreational behavior: internal locus of control or the feeling of freedom of choice.

Unfortunately, many recreation researchers have become disenchanted with the satisfaction concept, primarily because their measures have not correlated highly with specific setting components and because adaptations of job satisfaction models have not worked well in a predictive sense. The outstanding example of this situation is the lack of correlation between use density and level of satisfaction in river recreation settings (cf. Heberlein 1977; Manning and Ciali 1980; Schreyer et al. 1976). In this paper, we will develop an alternative way of examining the concept of satisfaction. Our approach will differ markedly from the current tradition of basing recreation satisfaction measures on the assumption of psychometric additivity and uni-dimensionality of satisfaction. We will

ignore the dependency on the discrepancy-valency approach developed in industrial psychology to quantitatively assess level of satisfaction. Our objective is not to define, criticize, or examine social-psychological meanings or measurements of the satisfaction concept. Rather, our orientation is to develop a tool that eventually will be useful to wildland recreation managers and planners; our focus will be on a framework effective in identifying setting attributes influencing visitor defined feelings of satisfaction. However, like other recreation researchers, we turn to organizational and industrial psychology for the basis of our approach.

THE TWO FACTOR THEORY

Industrial psychologists have faced problems similar to recreation researchers. In many work settings, individual components of the setting that intuitively should be associated with level of job satisfaction, such as salary, are, in fact, poorly correlated. In a series of books (Herzberg, Mausner, and Snyderman 1959; Herzberg 1966; Herzberg 1976), Herzberg and associates have argued that these findings result from an inappropriate articulation of the satisfaction concept. Herzberg states that researchers have measured the level of satisfaction in work settings along a single continuum from, for example, highly dissatisfied to highly satisfied. When the score on this scale is correlated with elements of the work setting, frequently confusing and contradictory results are found--a situation similar to the state-of-the-art in research on satisfaction in recreational settings today.

Herzberg argues that this problem exists because satisfaction is not the uni-dimensional concept implied by the single continuum measurement; indeed, he believes that satisfaction is conceptually distinct and independent from dissatisfaction. Thus, an individual's attitude toward a job may be located somewhere along the continuum not satisfied to highly satisfied. The same individual could

also rate the job along the continuum not dissatisfied to highly dissatisfied. An important implication of this theoretical statement is that individuals may hold feelings of satisfaction and dissatisfaction simultaneously toward the job.

A second important feature of the Two Factor Theory is the relationship of work setting attributes to the two concepts. In the original research (Herzberg, Mausner, and Snyderman 1959), and in later replications, workers (accountants and engineers originally) were asked to recall "critical incidents" in the past year which led to feelings of satisfaction and dissatisfaction with their jobs. They were then asked to identify causes of these feelings. Using content analysis techniques, the researchers identified 10 important factors influencing these feelings.

Significantly, there were certain factors mentioned most frequently as contributing to feelings of satisfaction, and there was a different set of factors associated with dissatisfaction. The factors associated with satisfaction were:

1. Achievement
2. Recognition (later renamed "recognition for achievement")
3. Work itself
4. Responsibility
5. Growth (added later)

Factors frequently associated with feelings of dissatisfaction included:

1. Company policy and administration
2. Supervision
3. Interpersonal relations
4. Salary
5. Working Conditions
6. Status (added later)
7. Security (added later)

Herzberg interpreted these two arrays as follows:

> The dissatisfying attributes are those which make up the basic prequisites for a safe, healthful working environment. They are preventative measures designed to eliminate or reduce hazards or to provide against economic deprivation of the worker. Because of this interpretation, these variables were also termed "hygiene" factors by Herzberg.
>
> On the other hand, there are the satisfying attributes or "motivational" factors. These are elements which tend to satisy individual needs for self-actualization or self-realization. These are the only variables which can reinforce the individual's pursuit of his life's aspirations. Herzberg originally characterized the two different sets as those that, respectively,

actuate avoidance behavior or approach behavior.

In work settings, the Two Factor Theory has a number of important implications concerning what setting attributes managers manipulate in order to motivate workers to increase productivity or to reduce dissatisfaction. For example, changing the conditions of work (such as shifting working hours) may reduce dissatisfaction held by the worker but will probably not result in an increase in satisfaction. If there is an increase in productivity that the worker attributes to a higher level of satisfaction because of new work hours, such change will be temporary. On the other hand, by allowing for greater opportunity for advancement within the organization, satisfaction will be increased and such satisfaction will motivate workers to higher levels of productivity as well as be relatively long lasting.

The Two Factor Theory is not without its critics. Most criticism has been directed at the critical incident methodology (Dunnette et al. 1967)--the possibility that respondents attribute good feelings about their jobs to themselves and bad feelings to the actions of others--and to poor correlations with individual job elements (Schwab and Heneman 1970). Herzberg and his students respond to these criticisms by pointing out methodological weaknesses in the critical research itself. Within the industrial psychology literature, the debate over the validity of

Herzberg's motivational-hygiene theory has not produced any definitive conclusions.

APPLICATIONS TO RECREATIONAL SETTINGS

The Two-Factor Theory has important parallels in recreational settings. For example, use density is often examined in relation to overall satisfaction. Generally, respondents are queried concerning the number of people encountered during a recreational trip and, occassionally, their preferences for number of encounters. These responses are then correlated with responses to a single five to seven point scale measuring satisfaction with the trip. Many studies report very low and insignificant correlations (cf. Becker 1977 and Manning and Ciali 1980). Herzberg would argue that such results should not be surprising. Since he feels that satisfaction and dissatisfaction are two distinct concepts, the overall satisfaction measure is theoretically unsound, and therefore methodologically weak.

One should also point out that the statistical reliability of single-itemn scales cannot be estimated for individuals unless a test-retest reliability procedure is used. Additionally, since outcomes from recreational experiences are multifaceted, it is to be expected that for many such experiences, levels of encounters may not be important to visitors (Herberlein 1977). Finally, the distribution of responses to single-item scales tends to be skewed toward the "highly satisfied" end, especially for

nonconsumptive recreation activities (cf. Vaske et al. 1980) compounding the statistical problems.

An alternative approach would be to ask visitors whether number of encounters increases satisfaction or dissatisfaction, as well as how salient solitude or privacy is to the experience. Assuming for the moment use density is salient to the visitor and is a dissatisfying attribute, low use densities will lead to less dissatisfaction but not greater satisfaction, for individuals who have defined solitude as an important component of the experience. For those individuals who have not defined solitude as important, encounters would not serve as either a satisfying or dissatisfying element.

The outcomes of the two approaches have very significant implications for managers of recreational settings. The traditional approach (characterized by small correlations between use density and satisfaction) leads managers to the ridiculous conclusion that, from an experience perspective, increasing use levels and encounters are of no consequence to the visitor. The Two-Factor Theory, however, would indicate that while encounters with other groups are not a source of satisfaction, they are a significant source of dissatisfaction. This suggests that lowering use density or numbers of encounters will have little impact on visitor's satisfaction, but the visitor will be less

dissatisfied. In other words, the hygiene conditions for solitude (which develop and are experienced within the individual) are improved. The important implication is that manipulation of recreationsal setting attributes may lead to significantly different outcomes--greater satisfaction or less dissatisfaction--rather than an increase in overall satisfaction.

There is no question that the level of satisfaction experienced by an individual during a recreational engagement is influenced by a variety of physiological, psychological, physical, and social parameters. A basic proposition of this paper is that satisfaction is a state which originates from within the individual, but is subject to a variety of environmental influences. These influences are interpreted and filtered by individuals in order to produce states of satisfaction and dissatisfaction.

It is safe to assume that many of the physiological, physical, and social-psychological parameters influencing individual states of satisfaction are beyond the control and manipulation of recreation managers. For example, individuals could "tune out" certain environmental conditions in order to maintain an acceptable level of satisfaction or dissatisfaction, as when an individual may selectively filter out crowds in order to achieve solitude. To the extent that these factors are beyond the control of scientists, they are incorporated in the error term of any

model of satisfaction.

Given these considerations, how can the Two Factor Theory be translated into recreational settings, and how can its applicability be systematically tested?

Undoubtedly, recreational settings tend to have a greater range of outcomes than work settings. This view is supported by the infinite forms recreational behavior may assume, as well as the relatively standardized structure of work settings across occupations. Too, employee expectations of job outcomes may be relatively constant for most vocations. For example, employees in a variety of work settings expect a commensurate level of compensation, acceptable working conditions, adequate and responsive supervision. In recreation settings, however, the importance of specific attributes would seemingly be influenced by how individuals define their experiences. Driver (1977) and his students have identified about 40 outcome domains resulting from recreational engagements. Of course, not all outcomes are important to recreationists during any given experience. Normally, only 4-6 outcomes of significant importance are identified in any one activity-setting interface. Thus, the setting attributes which are salient to specific recreational engagements are dependent on how participants define the importance of various outcome domains.

The conclusion that outcome domains do vary in

importance by activity has been established by a multitude of research (cf. Driver 1976; Knopf 1972). We are extending this principle by proposing that outcome domains vary in importance by activity-setting interfaces. Thus, hikers in the Rattlesnake Wilderness may have a different ranking of outcomes than Bob Marshall Wilderness hikers. Further, the ranking of outcome domains implicitly defines the significance of specific setting attributes to the experience. For example, McCool and Haydock (1976) reported that Virgin River Narrows (Zion National Park) backcountry hikers defining scenery appreciation and escape as highly important components of their experience were much more likely to answer questions about encounters with others during the recreational engagement than those who define these components of lesser importance. Additionally, those high on scenery and escape reported a preference for significantly lower numbers of encounters than those low on these outcome domains.

Work and recreational settings are similar, however, in that various components of the setting act to influence feelings of satisfaction and dissatisfaction. Thus, we will accept, as a fundamental proposition for this theory, the statement:

> Satisfaction and dissatisfaction in recreational settings are conceptually distinct and independent concepts.

The proposition is a major departure from current

approaches assuming psychometric additivity of positive and negative aspects of recreational engagements. It suggests that individuals will and can identify satisfying as well as dissatisfying elements of a recreational experience. It suggests that satisfying and dissatisfying elements are not psychometrically additive. Thus,

H1: Participants in recreational settings can distinguish between satisfying and dissatisfying experiences occurring during a recreational engagement.

As a second proposition of the theory, we accept the statement:

> The causes of satisfaction and dissatisfaction in recreational experiences are different.

This statement indicates that, similar to Herzberg's approach in work settings, there are at least two types of attributes in recreational settings: (1) those leading to satisfaction and (2) those leading to dissatisfaction. Thus,

H2: Participants will attribute one set of attributes to satisfaction and another set of attributes to dissatisfaction.

As Herzberg notes with respect to work settings, dissatisfying attributes are the basic "hygienic" elements of job conditions; those variables that are necessary for the minimally acceptable biological and psychological

functioning of the worker. In some recreational settings the analogy is rather direct: for example, adequate lighting is a prerequisite for night tennis. Adequate lighting rarely would be mentioned as a source of satisfaction for a tennis game, but inadequate lighting would probably be described as a source of dissatisfaction. In other settings, primarily wildland environments, dissatisfying attributes may not be so obvious because of the relatively ill-defined nature of the experience and because many wildland recreational experiences occur under a wide variey of conditions.

Nevertheless, if we assume Herzberg's argument we would expect that a number of dissatisfying attributes would deal with the environmental conditions necessary for a minimally acceptable experience. Many of those environmental conditions would probably have similar effects across several different outdoor wildland dependent activities such as swimming, hiking, backpacking, camping. For example, a lengthy rainstorm is likely to produce dissatisfaction within the participants of these activities because it simply would make all uncomfortable. Thus,

H3: Some dissatisfying attributes will be similar across a variety of outdoor, wildland dependent activities.

H4: Dissatisfying attributes which are similar across activities will be primarily

environmental variables (weather, bugs, etc.).

H3 and H4 represent one type of dissatisfaction likely to be found. We will tentatively term this set "environmental hygiene". At first glance they appear to be beyond the reach and manipulation of management. Even if this is true, there are at least two reasons why managers should be concerned about this source of dissatisfaction: (1) the amount of environmentally induced dissatisfaction may be compared with other sources of dissatisfaction in an assessment of the relative importance of various attributes and (2) managers can provide users with information about appropriate behaviors to cope with potential environmental dissatisfying attributes.

We noted earlier that the issue of saliency needs to be addressed when researching the concept of satisfaction in recreational settings. Saliency is defined as the importance of recreational setting attributes to the recreational engagement. As noted earlier, it would seem obvious that not all setting attributes would be equally important across all experiences. And, we would expect some attributes to be of higher and lower saliency for different experiences. The presence, however, of a given recreationist within a particular setting does not describe the saliency of that setting's attributes. An array of research has demonstrated that people recreate in the same

setting sometimes for vastly different reasons. Therefore, there must be an independent measure that researchers can use to establish saliency and control for it during statistical testing of hypotheses. In a sense we have suggested that environmental dissatisfying attributes are a special group of setting attributes salient across a variety of outdoor recreation experiences.

How is saliency established? In this study, saliency will be implicitly established through definitions of recreational experiences. We will use values of expected consequences or outcomes (Driver and Brown 1975) as the definition of the experience. Using the concept of demand hierarchy (Clark and Stankey 1979; Driver and Brown 1978), outcomes are linked to activities through settings and their attributes. Thus, wilderness backpacking in a low use area may lead to the outcome solitude. The term "may" is used because definitions of experiences and perceptions of setting attributes are filtered through reference group norms, past experience, knowledge, etc. (Kelley 1979). Setting attributes provide the necessary but not sufficient conditions for outcomes. In this structure, it is assumed that people select recreational activities and engage in them within characteristic settings--resources which can be described by a combination of managerial, social, and biophysical attributes. The activity within the setting leads to certain social-psychological outcomes. Thus, when

setting attributes are interpreted as being different than expected, outcomes may not be received, and dissatisfaction results. However, the only setting attributes that are relevant to the visitor are those which are logically related to expected outcomes. For example, to a river floater who expects an action/excitement outcome, use density would not likely serve as a source of satisfaction or dissatisfaction, but the size of rapids encountered would be an important and salient attribute.

Thus, if we know how the experience is defined (in terms of outcomes), we can hypotheize (1) the saliency of setting attributes and (2) the contribution of a setting attribute as a source of satisfaction or dissatisfaction. The general form of the hypotheses is stated as:

GH1: If outcome domain O(i) is highly important to the experience, setting attribute A(i) is salient.

GH2: Highly salient A(i) will be identified as a satisfying (dissatisfying) attribute.

GH3: If outcome domain O(i) is unimportant to the experience, setting attribute A(i) is not salient.

GH4: Nonsalient A(i) will not be identified as either a satisfying or dissatisfying attribute.

The experience definitions will lead to identification

of both satisfying attributes and dissatisfying attributes. The specific setting attributes identified will depend on, again, the experience, and what elements of the experience are important.

A final question is "what attributes will be identified as sources of satisfaction and what attributes will serve as sources of dissatisfaction?" Adopting the results of Herzberg's work, we suggest that attributes internal or intrinsic to the experience serve as satisfying elements, while attributes external to the experience function as dissatisfying elements. But which attributes are internal and which are external? Currently, the literature is of little help in this respect.

This study represents a major first step in exploring the application of the Two Factor Theory to recreational settings. To achieve this goal, the study has two primary objectives:

1. Identifying what setting attributes will be cited as sources of satisfaction and dissatisfaction, and how these relate to the importance of specific outcome domains.
2. Testing how questions relating to sources of satisfaction and dissatisfaction should be posed.

In our translation of the Herzberg theory, we have maintained his wariness of measures of the amount of

satisfaction or dissatisfaction: our approach will not provide a ratio or ordinal measure of either concept although we do include a measure of overall satisfaction (Vaske et al. 1980) to further evaluate the Two Factor Theory. We will, however, attempt to measure amounts of dissatisfaction through the use of behavioral intentions. Our reasoning follows.

Decision-makers are willing to allow users to identify needed changes and are willing to make recreational experiences as satisfying as possible. We suggest that how a visitor predicts his behavior will change or even what management practice he feels should be changed/implemented is an appropriate measure of dissatisfaction. Locker and Dunt (1978) found that one of the primary values of a satisfaction study is to provide "an indicator of which aspects . . . . need to be changed . . . . to improve (satisfaction)." By itself, satisfaction is a personal observation and is useful in policy standards. It does not provide, however, concrete characteristics against which a decision-maker may compare desired recreational experiences with those actually experienced by visitors. This is exactly what dissatisfaction variables can show as expressed in perceived behavioral intentions or management changes.

There is a strong tendency for visitors to report high levels of satisfaction. This is deceiving on first sight

and, as discussed earlier, could lead to inappropriate management conclusions. This effect may be explained partially by cognitive dissonance theory or described as the Pollyanna effect (Olander 1976). It may also be that users may not give sufficient priority to either satisfying or dissatisfying attributes when queried in an open-ended manner about satisfaction (Locker and Dunt 1978). For these reasons, asking the visitor what behavior or management practice should be changed in response to dissatisfying attributes (which the survey asks the respondent to recall) is more likely to evoke specific criticisms and associated suggestions to help solve problems. For example, a study Scottish hospitals found that the volume of criticism may be a more realistic guide to patient satisfaction than a measure of overall satisfaction. Criticisms can be positive from the decision-makers viewpoint since identifying them can define previously unknown problem areas. Dissatisfaction expressed as criticism or suggestions provides a measure of what needs to be changed or perhaps how users are reacting to management changes.

Decision-makers in recreation management are faced with the goal of optimizing visitor satisfaction. Management practices which cause dissatisfaction can be changed by making the decision-maker aware of criticism, with benefits to both the visitor and manager resulting. As

an example, the manager that is aware that mosquitoes are a strong dissatisfying attribute may find that suggesting to the visitor to carry insect repellant enables the visitor to have a more enjoyable recreational experience.

We hypothesize:

GH5: Changes in behavior or management suggested will be directly related to salient outcomes.

GH6: Changes in behavior or management will be dependent on areas of dissatisfaction reported.

GH5 reflects the importance we have placed on the issue of saliency when investigating satisfaction in recreational settings. GH6 is consistent with the basic propositions of the Two Factor Theory.

SUMMARY

The structural elements of the Two Factor Theory approach to satisfaction in recreational settings are indeed more complex than Herzberg's original formulation. This reflects the wider diversity of salient setting attributes found in recreational settings, the greater variability of behaviors appropriate to those settings, and the larger range in outcomes resulting from recreational behaviors. The major propositions forming the framework of our study include:

1. Satisfaction and dissatisfaction are conceptually distinct and independent concepts.
2. Different setting attributes lead to feelings of satisfaction and dissatisfaction.
3. Setting attributes vary in their saliency to recreational experiences.
4. Non-salient attributes are ignored or perceptually filtered by visitors; only salient attributes influence feelings of satisfaction and dissatisfaction.
5. Saliency may be implicitly determined by how visitors define their experience in terms of outcomes expected.
6. The intensity of dissatisfaction can be estimated by the behavioral or management

changes suggested by visitors.

In the remainder of this report, we will describe efforts to evaluate the usefulness of this approach to assessing satisfaction in recreational settings.

STUDY METHODOLOGY

Study Area

For the initial evaluation of our approach to satisfaction, we selected the Rattlesnake National Recreation Area and Wilderness (RNRAW) as the study site. The RNRAW was selected because of its relatively high and diverse recreational use, its convenient location, and because of previous studies on visitors. Located about four miles north of Missoula, Montana and encompassing about 61000 acres, the RNRAW offers a variety of recreational settings: the lower accessible area is heavily used by day visitors (Corti et al. 1982) and may be characterized as an undeveloped regional urban park; the upper area is designated Wilderness and includes remote, trailless regions.

Information from previous studies has documented use patterns and levels in the RNRAW of a period of time (1978-1982). Ninety-five percent of the visitors are day-users, with an average length of stay of about one hour (Corti et al. 1982). Over 85 percent of the visitors are from the Missoula area. Visitor types range from horse users, hikers, bicylists, and joggers to motorcylists which are permitted in the NRA portion. Nearly all use enters at the extreme southern end of the area through one point.

The Questionnaire

OUTCOME DOMAINS:

Critical to our study is previous documentation about experience definitions of RNRAW visitors. Kelley (1979) has identified eight outcome domains for RNRAW visitors. The following domains were identified by Kelley and replicated in this study:

1. learning about nature
2. solitude
3. escape personal-social pressures
4. being with similar people (affiliation)
5. scenery appreciation
6. exercise
7. action/excitement
8. achievement.

These outcomes are more fully explained by Driver (1977). They are used here to establish salient attributes of RNRAW visitors. Two to four statements tapping the domain of these outcomes were included in the Questionnaire (question 9, Appendix D). For each item, respondents were asked to indicate its importance on a six point scale ranging from "not at all important" to "extremely important".

SOURCES OF SATISFACTION AND DISSATISFACTION:

A major part of the questionnaire addressed the satisfaction issue. In question 10, respondents were asked to indicate if each of the 13 setting attributes presented was a source of satisfaction or dissatisfaction. In question 13, respondents are asked to evaluate in a similar manner seven factors concerning the organization and implementation of the recreation trip. Additionally, respondents were queried concerning possible satisfactory or dissatisfactory experiences during their visit. Following this, two open-ended questions were asked, the first concerning sources of satisfaction or dissatisfaction, the second dealing with trip high points and low points. Both questions were included because it was necessary to determine which was the best way of gathering responses relevant to our evaluation of the Two Factor Theory.

OVERALL MEASURE OF SATISFACTION:

An overall measure of satisfaction was included to more firmly test our approach. We would expect it to not correlate with any significant variable. We selected the measure discussed in Vaske et al. (1980) because it has achieved fairly widespread recognition and popularity among recreation researchers.

OTHER INFORMATION:

In addition to the above measures, several other types of information were collected with the questionnaire. These items (shown in Appendix D are not relevant to the current report.

Sampling Procedures

The population of study includes all visitors 16 years of age and older visiting the RNRAW during August and September, 1981. During this period, days were divided into four hour segments beginning at 8 AM, 12 Noon, and 4 PM. These four hour periods were stratified by week day and weekend day and then randomly selected. The selected periods are shown in Appendix E.

Visitors exiting the RNRAW during a sampled period were approached and asked to cooperate in the study. Those cooperating (only one refused) were given a mail return questionnaire to complete at home. In order to filter out brief visits--it was felt that visitors staying longer could more competently complete the questionnaire--only visitors staying three hours or longer were included in the sample. In September, when use levels dropped unexpectedly, a one hour criterion was used (with only a dozen or so respondents staying less than three hours but more than one

hour actually included in the sample). A reminder postcard and full questionnaire were sent 10-14 days apart. The final sample size yielded 135 individuals; 113 returned the questionnaire for a response rate of 82 percent.

RESULTS

Generalized Tests of the Two Factor Theory

H1 suggested that satisfaction and dissatisfaction in recreational settings are conceptually distinct and independent concepts, i.e., visitors could hold both feelings of satisfaction and dissatisfaction toward the same recreational engagement. We asked sampled respondents if there were periods during their visit when they felt particularly satisfied or dissatisfied in order to test this hypothesis. Table A-1 shows the results secured, and supports H1. Significantly, 42 percent of the sample reported both satisfying and dissatisfying feelings about their experience. We feel that this finding is especially significant given that most of the sample consisted of day users on relatively short visits. Over 50 percent of the sample did report a satisfying experience without any accompanying dissatisfaction. However, we interpret the data to be strongly supportive of the Two Factor Theory.

H2 hypothesized that recreational visitors will cite one set of attributes as leading to feelings of satisfaction while another set will lead to dissatisfaction. Tables A-2 to A-4 provide data on this hypothesis. In Table A-2, respondent reactions to the 20 attributes provided them in the questionnaire are displayed. There are several implications from this table.

First, there are a number of attributes where the respondents in our sample could not say whether an attribute was a source of satisfaction or dissatisfaction. For example, nearly two-thirds of the sample were unable to determine whether personal recreational equipment used on the trip was a source of satisfaction or dissatisfaction. Of course, most day users carry little equipment with them, and in this situation such a finding is not surrising. However, for a number of attributes, respondents were able to indicate what role it played in the experience as well as agree fairly well on the direction.

For example, less than 3 percent of the sample indicated "neither" for scenery; the remainder unaminously agreed that this attribute was a source of satisfaction. Several attributes dealing with the inherent beauty or landscape variety display similar responses.

Yet, there are several other types of attributes where there is considerable disagreement in the data. Insects are an example. Only half of the sample were able to evaluate insects as a satisfying or dissatisfying attribute; this component of the sample split almost evenly on the role insects played in the experience.

Finally, one notes that the attributes concerning trip organization and implementation served mostly as sources of satisfaction. Since these attributes are directly under the influence of most visitors, this result is not surprising in light of Herzberg's theory. However, there was

considerable uncertainty over the role of personal responsibilities and group leader. Again, given the predominant day use character of the sample, this result is not unexpected.

In Table A-3, we have displayed attributes as sources of satisfaction or trip high points as indicated by the respondents in the open-ended questions. Numerous specific attributes were mentioned in response to these questions; they were content analyzed and classified as shown in the table. The reader is referred to Appendix C for the actual classification of individual items. For both questions, the most frequently mentioned attribute was scenery, supporting data in Table A-3. Solitude and the activity itself were the next most frequently mentioned attributes serving as sources of satisfaction.

Table A-4 displays attributes cited as sources of dissatisfaction or trip low points in response to the open-ended questions. Aspects of the social and managerial settings were the most frequently mentioned attributes. Notably, the presence of motorcycles was also cited relatively frequently (the sample contained few motorcyclists) despite their relatively low use level (Corti et al. 1982).

Is H2 supported? The data from the closed-ended question is confusing (especially when one considers a number of confounding factors to be discussed later). By summarizing the contents of Tables A-3 and A-4, however, we

feel that H2 is supported. Table A-5 shows that for the most part, attributes cited as leading to trip high points/sources of satisfaction are different from those leading to low points/sources of dissatisfaction. This is a significant finding--one of critical importance in adapting the Two Factor Theory to recreational settings. It does suggest that attributes cannot be rated on an overall single continuum of satisfaction/dissatisfaction; it does suggest that some attributes only add to experiences while others only detract.

Tables A-6 and A-7 show data concerning H3 and H4. What is displayed in these tables is the proportion of participants engaging in listed activities who cite (from the open-ended question) sources of dissatisfaction. For our adaptation to be supported by the data, each attribute should be mentioned about equally frequently across activities. Of the six attribute classes listed in the tables, only personal factors had a fairly consistent relative frequency; for all others the range in relative frewquencies was about double. Never-the-less, there appear to be no glaring out-of-proportion figures. The sample size could also influence the findings in these tables. The data suggests moderate support for H3.

In H4, we hypothesized that attributes leading to dissatisfaction across activities would be primarily variables such as weather and insects. As noted by the responses to the closed-ended questions, there was

considerable ambiguity in this sample concerning the role of these types of variable, although the responses to the open-ended questions provided somewhat different conclusions. The data shown here suggests that there is a wide variety of "universal dissatisfying attributes" across activities. Thus, H4 is supported, but only from the viewpoint that the hypothesis is a narrow version of a broader one.

SUMMARY:

In summary, the data tends to support the four principal hypotheses put forth. Respondents do recognize satisfactory and dissatisfactory elements of recreational experiences, they cite different setting attributes as leading to those feelings, several attributes were fairly consistently cited as sources of dissatisfaction or trip low points across activities, but there were a broader set of dissatisfying attributes than originally hypothesized. In many cases, our data shows mixed results; in only a few cases are results in directions opposite to our original hypotheses.

Outcome Domains and Setting Attributes

We indicated earlier that Herzberg's articulation of the Two Factor Theory was not completely applicable to recreational settings because of the diversity of outcomes which can be expected from a given setting. How visitors define their experiences will influence the saliency of specific setting attributes as sources of satisfaction or dissatisfaction. In this section, we report how the importance of various outcome domains is related to attribute saliency. The findings will be summarized for each outcome measured and how a specific attribute acted (as a source of satisfaction, dissatisfaction, or as non-salient).

Of the eight originally measured outcome domains, only six were identified in this sample using the BMDP Cluster Analysis procedure. The six domains identified and their Cronbach's alpha reliability coefficients are shown in Table A-8. Items composing each outcome domain scale are listed in Appendix B. As Table A-8 indicates, most scales met the generally recognized criterion of .75 as an acceptable level for Cronbach's alpha in discriminating among groups. The solitude-stress release domain has the weakest reliability, but even it is just below the criterion level.

The next step in the analysis was to divide the sample

into two groups--those scoring above the mean on an outcome domain score and those scoring below the mean. The objective of this step was to further develop the concept of salience. Individuals scoring above the mean were hypothesized to identify more attributes as salient than those scoring below the mean. Saliency was measured two ways: directly for the closed-ended questions and indirectly for the open-ended questions. In the direct measurement, the extent to which respondents could identify an attribute as a source of satisfaction or dissatisfaction indicated saliency. Conversely, a "neither" response suggested a nonsalient attribute. In the indirect measurement, the lack of mention of the attribute indicated nonsaliency while mentioning the attribute suggested it is salient for the respondent.

Closed-ended Question Responses

Table A-9 shows the saliency of each attribute for the sample on each outcome domain as established through the closed-ended questions. We chose the criterion of 25 percent of the sample selecting "neither" as the critical level for saliency. If more than 25 percent of the respondents indicated "neither a source of satisfaction or dissatisfaction", then the attribute was classified as nonsalient. While somewhat arbitrary, the figure does serve as a point of departure for further discussion of the

saliency issue.

A number of observations can be made from the table. First, the results displayed are somewhat disappointing in that there isn't greater discrimination between salient and nonsalient attributes. This is partly a function of the 25 percent criterion. It may also be that for day visitors, many setting attributes are indeed nonsalient. In the next few tables (A-10 to A-15), the actual frequency distributions are shown. Those tables show that the proportion of respondents indicating the attribute is "neither" is higher for those scoring "low" on the scale than for those scoring "high" on the scale for most attributes.

There are 25 (in Table A-9) comparisons where an attribute is evaluated differently at a statistical significance level of .05 by respondents in different categories. Of the 25 comparisons, only one is in a direction opposite to that expected--the attribute "people I traveled with" for the achievement domain.

By looking down rows for each outcome domain, one can get an idea of what attributes and how many are salient for each domain. Between eight and nine attributes were recognized as salient (using the 25 percent criterion) for each outcome domain. Some attributes are salient for some outcomes, but not for others. Other attributes are salient for all outcomes. A few are nonsalient for all outcomes measured. For example, trail condition is a salient

attribute for all outcomes except for individuals scoring low on achievement, affiliation, and scenery appreciation. Scenery, weather, the activity itself, and streams are salient attributes for all respondents, regardless of how they scored on any outcome. Insects, personal recreation equipment, lakes, and a few other attributes were viewed as nonsalient by the total sample.

The lack of differentiation of attributes into salient and nonsalient categories influenced by scores on specific outcome domains is a result of several factors. First, as previously mentioned, trend information is not displayed in Table A-9. Data in Tables A-10 to A-15 suggests that the trend is for respondents scoring high to more likely indicate that a specific attribute is salient than for those scoring low. Second, the lack of differentiation can be linked to the respondents not encountering a specific attribute during the course of the visit. For example, the attribute, lakes, was identified as nonsalient for both categories on all outcomes while streams was a salient attribute for the total sample. Most respondents in the study did not see any lakes (since they are all located in the backcountry) but all did hike along Rattlesnake Creek. This problem probably characterized the attributes insects, recreation equipment, litter, meet similar recreationists, meet other types of recreationists, and dogs.

Other types of problems faced other attributes. For example, area management was nearly universally identified

as a nonsalient attribute. After examining the pattern of responses and taking into consideration the current intensity of management of the RNRAW, we concluded that it was nonsalient for most respondents because there is very little intrusion of management into recreational experiences. The only significant, intrusive, management at the time of the study concerned closure of a major trail to mechanized travel (in addition to patrol). This lack of intrusive management probably accounted for the responses secured. Additionally, the term "area management" may have been too vague for many respondents.

Other attributes, including recreation equipment, group leader, and responsibilities of the respondent on the trip had different problems. Since most of the individuals sampled in the study were on relatively short day trips, these attributes were nonsalient. Testing of the Two Factor Theory in settings where respondents are on multi-day trips requiring substantial equipment, responsibilities, and leadership may identify these attributes as salient.

For the 24 attribute comparisons where saliency was in the direction hypothesized, most had face validity. For example, the respondent's personal physical condition was salient for those scoring high on the outcome exercise, but nonsalient for those scoring low. Similarly, improving skills was salient for high achievement scorers and nonsalient for low achievement scorers. People with the respondent on the visit was a salient attribute for high

affiliation scorers and nonsalient for low affiliation scorers. Litter was a salient attribute for those high on learning about nature, but nonsalient for those low on this scale.

Tables A-10 to A-15 report actual frequency distributions and chi-square significance for evaluation of each attribute as a source of satisfaction, dissatisfaction or neither for score categories on each outcome domain. Generally, there were few statistically significant differences between high and low scorers. This somewhat disappointing result is tempered by the types of problems noted above. And, visual examination of the tables indicates that in many other cases nonsignificant trends are in the direction suggested by our articulation of the Two Factor Theory. We will briefly summarize results by outcome domain.

For Learning About Nature, streams, lakes, wildlife, insects, and scenery--all attributes related to this outcome--were more salient for high scorers than for low ones. They also were more likely to be reported as sources of satisfaction for the high scorers. Sources of dissatisfaction that tended to be reported more frequently for high scorers were recreation equipment, area management, litter, and meeting other types of recreationists.

On the Exercise domain, attributes which tended to be more salient for high scorers included skill improvement,

personal physical condition, dogs, insects, weather, trip responsibilities, area management, and trail conditions. Attributes which tended to be reported more frequently as sources of satisfaction for high scorers included weather, insects, litter, meeting similar recreationists, personal trip responsibilities, personal physical condition, and skill improvement. There were several attributes that tended to be more likely reported as sources of dissatisfaction for the low scorers. These included litter, meeting other types of recreationists, group leader, personal trip responsibilities, and personal physical condition. The latter two attributes were also more likely to be reported as sources of satisfaction for the high scorer.

On the Achievement outcome, high scorers were more likely to report the following as salient attributes: trails, insects, personal recreational equipment, area management, litter, dogs, wildlife, people on the trip, personal physical condition, personal trip responsibilities, and skill improvement. Sources of satisfaction which were more likely to be reported by the high scorer included trails, personal recreational equipment, litter, meeting similar recreationists, meeting other types of recreationists, wildlife, streams, personal trip responsibilities, personal physical condition, and skill improvement. Group leader and people on the trip were

more likely to be reported as sources of satisfaction by low outcome scorers.

Attributes more salient for high scorers on the Affiliation outcome scale included trails, weather, area management, litter, dogs, streams, people on the trip, group leader, personal trip responsibilities, and skill improvement. Except for trails and weather, these attributes were also more likely to be reported as sources of satisfaction for the high scorers. Insects and the group leader also were more likely to be sources of dissatisfaction for high scorers.

For the Scenery Appreciation scale, trails, weather, scenery, litter, wildlife, lakes, and streams were more likely to be reported as salient attributes. For all these attributes, except for litter, they were also more frequently indicated as sources of satisfaction by high scorers. This result is important because it lends face validity to our articulation of the Two Factor Theory. Meeting other types of recreationists was the only other attribute reported more frequently by the high scorer as a source of dissatisfaction

The attributes trails, insects, wildlife, the activity itself, personal trip responsibilities, personal physical condition, and skill improvement were more frequently indicated by high scorers on the Solitude-Stress Release outcome as salient attributes. Again, these attributes were frequently sources of satisfaction for high scorers.

Interestingly, dogs and litter were more likely to be sources of dissatisfaction for low scale scorers than for high scorers.

SUMMARY:

In summary, the closed-ended question worked only moderately well. However, the problem with the closed-ended question wasn't so much a problem with it as with the lack of control from which to analyze data. Many attributes were nonsalient, but only because they had not been encountered. Meeting other similar recreationists is an example. Hindsight suggests that this attribute will not be cited as a source of satisfaction or dissatisfaction unless the respondent actually encounters other recreationists. We did not include a control for this in the questionnaire.

Likewise, our efforts to be completely neutral in posing attributes lead to some problems. We used the term insects as a representation of mosquitoes, black flies, etc. It is possible that respondents interpreted this term to mean insects in general, thus, it was reported as a source of satisfaction. Litter is another example. The presence of litter would, we believed, lead to dissatisfaction. Our data supports that hypothesis to a limited extent. It is a reasonable hypothesis that some respondents interpreted the term litter to mean its

presence while others interpreted it to mean its absence. This may have lead to the mixed results we found on this attribute.

Controlling for the values on the various outcome domains is a critical component of our theoretical framework. While the various attributes we examined were for the most part not differentiated through this technique, those that were, displayed the direction, if not always the statistical significance for which we were looking. We were also hampered by a relatively small sample size, forcing us to use half of the sample as high and the other half as low scorers. We could expect more consistent results if we could use the top and bottom quartiles for our contrasts. These individuals would be much different from each other in terms of their scale scores, thus differences in how respondents defined attribute saliency and as a source of satisfaction and dissatisfaction would be more visibly displayed. By using the mean, some individuals in opposite categories were actually not very far from each other in terms of their score on the outcome domain scale.

The reader should keep these issues in mind as we explore the next section. It will detail how respondents reacted to the open-ended questions.

Open-ended Question Responses

The questionnaire contained two open-ended items attempting to identify sources of satisfaction and dissatisfaction: one item asked respondents directly to identify any attributes or trip characteristics which may have been the cause of "particularly good" or "bad" feelings about their visit to the RNRAW. The other question dealt with trip "high" and "low" points. Because of the exploratory nature of the research, we decided to include both approaches in an effort to identify which question provided the best responses from the perspective of theory development and testing, although the questions are somewhat redundant. the open-ended items were also included because we felt not all sources of satisfaction or dissatisfaction were covered in the closed-ended question.

During the coding of responses to these items, we coded the first three attributes mentioned by each respondent. While many respondents provided three different sources of satisfaction, dissatisfaction, high points, or low points, few listed more than three distinctively different sources. Following coding of individual sources, responses were content analyzed and placed in appropriate categories. Individual responses and categories used are shown in Tables C-1 to C-4. As with any content analysis procedure, the classification process was judgemental. Never-the-less, slight changes where ambiguity does exist would probably have a negligible effect on the overall results.

Table A-7 is a summary table which shows the content of the attributes mentioned on the two dimensions of the Two Factor Theory. Note that there is very little overlap in classified attributes mentioned as low points/sources of dissatisfaction or high points/sources of satisfaction. Weather and environmental factors, past agency management, the presence of motorcycles, and personal factors were universally identified in an open-ended format as trip low points or sources of dissatisfaction. The social setting (including enjoyment with others) was mentioned for both dimensions, but an examination of Appendix C suggests that there were slightly different meanings attached to the low/dissatisfaction social setting compared to the high/satisfaction social setting. Similarly, attributes of the biophysical setting were mentioned both as a source of satisfaction and dissatisfaction, but again, evaluation of specific comments suggests different meanings.

High points/sources of satisfaction were rarely mentioned as low points/sources of dissatisfaction. These attributes dealt with primarily the nature of the area, the recreational activity engaged in by the respondent, and the solitude found by visitors in the RNRAW. This is an important finding since it is consistent with Herzberg's conclusion with respect to similar attributes in work settings. It may be possible to argue that the attribute solitude is on the opposite extreme on the same dimension as social setting for the low/dissatisfaction attributes.

However, examining the specific comments provided by respondents suggests more than simply a lack of encounters. Such comments as "peace", "quiet", and others does suggest a qualitatively distinct dimension.

Incidentally, respondents generally provided more attributes for the high/low point question than the satisfaction/dissatisfaction question, suggesting that they could more easily relate to the former item. The high/low point method may also be more compatible with Herzberg's "critical incident" methodology applied in work settings.

The next group of tables (A-16 to A-27) show high point/sources of satisfaction by how respondents scored on each of the six outcome domains. In these tables, we are particularly interested in relative frequencies which are greater for those scoring high on an outcome domain scale than for lower scorers, or where there are high relative frequencies regardless of respondent score. Where the higher relative frequency is related to the outcome domain, there is clear support for our articulation of the Two Factor Theory. Unfortunately, the SPSS program which groups multiple response items together does not conduct statistical testing of cell differences. Therefore, chi-square tests of significance have not been included in these tables.

Tables A-16 and A-22 show sources of dissatisfaction and trip low points for scores on the Learning About Nature outcome domain. There were few meaningful differences

between low and high scorers in terms of respondent mentioning of specific attribute classes. High scorers on this scale tended not to report "solitude" as frequently as lower scorers as a source of satisfaction (although this was not supported by the high point question). Interestingly, opposite results were found with the scenery attribute for both questions, although scenery tends to be mentioned frequently by all respondents.

For individuals scoring high on the Exercise outcome domain (A-17 and A-23), scenery was much more frequently reported as a high point/source of satisfaction than low scorers. This somewhat unexpected result could be explained by the multiplicity of outcomes people expect; thus high scorers on this domain may have scored high on the Scenery Appreciation domain. Another hypothesis may be that these respondents may like to take their exercise in scenic localities--the scenery serves as an enhancing quality to the activity.

Tables A-18 and A-24 display results for the Achievement outcome domain. Both questions indicate that solitude is not as important for high scorers as low scorers; however, scenery is of much greater importance for the high scorer as a source of satisfaction. The high point question suggests that enjoyment with others is also a more important satisfying aspect for the high scorers.

Interesting results were found for scores on the Affiliation outcome domain (Tables A-19 and A-25). While

solitude and scenery as sources of satisfaction or trip high points were not related to scores on the Affiliation scale, the activity itself and enjoyment with others were. For both these attributes, high Affiliation scorers were more likely to report them as high points/sources of satisfaction than low scorers--providing support for the Two Factor Theory.

Results for the Scenery Appreciation outcome domain were somewhat opposite to results reported earlier for the closed-ended question (see Tables A-20 and A-26). High scorers on this dimension tended to report less frequently scenery as a trip high point or source of satisfaction than respondents scoring lower on this scale. Why this is so is not known. High scorers did report the bio-physical setting as high point/source of satisfacion more frequently than low scorers--suggesting that the first result may be a statistical artifact. However, the finding does need further inquiry. Table A-20 also shows that solitude was more frequently mentioned as a trip high point for higher scoring respondents than lower ones while enjoyment with others was not as frequently mentioned by high scoring respondents.

Tables A-21 and A-27 report results for the Solitude-Stress Release scale. Both tables demonstrate the importance of the solitude attribute as a source of satisfaction or trip high point for individuals scoring high on these scales. Perhaps the support is strong

because there is considerable agreement on the social meanings attached to the items making up this scale. For other attributes, however, the tables provide somewhat contradictory results. For example, the activity itself tends to be more frequently mantioned as a source of satisfaction for high scorers than low ones. However, as a trip high point the result is opposite.

The next series of twelve tables (A-28 to A-39) report respondents' opinions on trip low points and sources of dissatisfaction. Generally, individuals scoring high on Learning About Nature are more sensitive to weather, environmental factors, the biophysical setting, and personal factors than low scale scorers (A-28 and A-34). Reactions to the managerial setting were mixed however.

Tables A-29 and A-35 show results for the Exercise outcome domain. Again, the tables show opposite results for visitor reaction to the managerial setting. Personal factors are less likely to be mentioned as a trip low point by high scorers than low ones, consistent with earlier data. For other attributes, there were few differences, suggesting that the importance of Exercise as an experience outcome has little influence on visitor reactions to setting and trip attributes.

Results for scoring on the Achievement outcome domain were consistent for both questions (Tables A-30 and A-36). Those scoring high on this scale were more likely to report as trip low points/sources of dissatisfaction weather,

environmental, and personal factors. High scorers tended not to be as sensitive to motorcycles, the managerial and social settings.

The social setting was a greater source of dissatisfaciton/low point for high scorers on the Affiliation domain than low scorers (Table A-31 and A-37). Perhaps high scorers were disappointed in their social relationships. Weather and environmental factors also tended to be trip low points for high scorers, but no real difference was reported on the source of dissatisfaction question for this attribute. Low scorers on the Affiliation outcome domain tended to report personal factors more frequently as a trip low point than the high scorers. However, score on this domain did not appear to influence visitor evaluations of motorcycles and the managerial setting as trip low points or sources of dissatisfaction.

Tables A-32 and A-38 indicate that high scorers on the Scenery Appreciation outcome domain were much more sensitive to motorcycles than low scorers. Additionally, the tables indicate that weather and environmental factors were less likely to play a negative role in high scorer experiences. However, high scorers were somewhat more susceptible to the social setting than low scorers while high Scenery Appreciation scorers were less likely to report personal factors as a source of dissatisfaction/trip low point than low scorers.

Finally, Tables A-33 and A-39 depict results for the Solitude-Stress Release outcome domain. Personal factors was the only attribute high scoring respondents indicated more frequently as a source of dissatisfaction. The other attributes were given similar evaluations regardless of score on this outcome domain. However, when respondents were asked to identify trip low points, major differences did occur. For example, the managerial setting, bio-physical setting, and motorcycles were more frequently rated as trip low points for high scorers than low scorers. On the other hand, low scoring respondents were more likely to rate weather and the environment, the social setting, and personal factors as low points than high scorers.

SUMMARY:

The results of the open-ended questions were somewhat mixed. These questions were able to identify distinctive setting attributes and trip characteristics leading to feelings of satisfaction and dissatisfaction. To a great extent, these factors are somewhat mutually exclusive as hypothesized. The question asking respondents to identify high points and low points of their trip was more successful from the perspective of number of responses: about twice as many respondents were able to identify trip low points as were able to indicate sources of dissatisfaction. Slightly more respondents were able to

suggest trip high points than sources of satisfaction. Conceptually and methodologically, the question of trip high and low points appears to be closer to Herzberg's original approach of critical incidents than the question asking respondents to recall instances of satisfaction and dissatisfaction.

As with the closed-ended questions, the open-ended ones were not able to effectively and consistently identify the different attributes as sources of satisfaction or dissatisfaction by respondent score on the six outcome domain measures. Often, the two open-ended questions provided contrasting results--suggesting that they may indeed be two different questions. On a few occasions, the results were opposite what would seem to be intuitively the correct direction.

Some of these problems can be explained by the small sample size--in several tables the relative frequencies are based on fewer than 30 total respondents. Visitors to the RNRAW also are somewhat different than visitors to other wildland based areas. They generally come in very small groups, and stay a very short while. Many engage in non-traditional wildland activities such as jogging, bicycling, etc. It is possible that the variance encountered here in some of these independent variables combined with a small sample size confounded the expected results.

Never-the-less, the fact that different attributes or

trip characteristics were cited by respondents in the open-ended questions as leading to satisfaction, dissatisfaction, high points, or low points lends considerable credibility to our translation of the Two Factor Theory to recreational settings.

Overall Measures of Satisfaction

As indicated earlier, an overall measure of recreation trip satisfaction was included in the questionnaire. This variable consisted of a six item scale, with responses ranging from "perfect" to "Poor". The scale has been used in a variety of other studies (cf. Vaske 1980). It was chosen for this reason (a totally new scale would have required extensive pretesting and evaluation).

Herzberg has argued that such overall measures of satisfaction do not correctly tap the two concepts of satisfaction and dissatisfaction. Not only is an overall measure invalid conceptually, it also represents psychometric algebra inappropriate to the concept. For the purposes of theory building and evaluation, we accept Herzberg's viewpoint. We expect that the overall measure of satisfaction to be poorly correlated or associated with any variable we measured in this study.

Nearly 71 percent of the respondents in the study indicated their visit was excellent or perfect-- even though 46 percent reported at least one dissatisfying

experience. The relatively high percentage of excellent or perfect evaluations is consistent with most reports in the literature. The overall measure was cross-tabulated with a number of variables, including number of people encountered on the trip, and all 20 closed-ended trip attributes. Importantly, the overall measure did not correlate with number of encounters, even when score on the Solitude-Stress Release outcome domain was controlled.

When cross tabulated with the 20 closed-ended attributes, trails, weather, litter, the activity itself, group leader, and travel route were statistically associated with overall satisfaction at the .05 level. However, for trails, weather, and group leader, cell sizes were too small to detect any meaningful trends. For litter, it appears that those rating their visit higher were more likely to identify litter as a source of satisfaction; those with lower overall trip evaluations, tended to view it as a source of dissatisfaction or neither. Interestingly, respondents indicating that meeting other types of recreationists was a source of satisfaction or neither were more likely to evaluate their trip as excellent or perfact. No clear pattern was discerned from the data on travel route.

In summary, the overall measure of satisfaction was associated only with a few variables in any meaningful way. If management had relied on this measure, few problems would have been identified. By using the Two Factor

approach, we were able to determine that many visitors did have dissatisfactory experiences--and in many cases the attributes relating to these situations were under the control of management.

DISCUSSION

In this paper, we have attempted to translate and apply a theory of job satisfaction for wildland recreational settings. This effort is not unlike many in recreation research where scientists have attempted to build upon past developments and advances in other fields to enhance understanding of human behavior in recreational environments. Our attempt here has been a significant departure from most recreation research concerned with the satisfaction concept: we have taken a little known theory of job satisfaction (at least among recreation researchers) and have attempted to develop an application of it to recreation; we have not relied on the frequently used expectancy-valency approach to do so.

Our results suggest that the Two Factor Theory does hold promise for recreation research and management. This conclusion is based on the following evidence. First, our sample of primarily day-users in a relatlively heavily used newly-designated National Recreation Area and Wilderness were able (over 40 percent) to identify both satisfying and dissatisfying elements of (basically very short) recreational experiences; essentially, our respondents held both feelings of satisfaction and dissatisfaction toward the same recreational engagement. This is a significant

departure from other views of recreational satisfaction--where visitors are asked to psychometrically indicate on 5 to 7 point scales their level of satisfaction in a unidimensional context.

Second, and most importantly, respondents did identify substantially different attributes as leading to satisfaction and dissatisfaction. This finding is consistent with Herzberg's theory for work settings and contradictory to approaches using overall measures of satisfaction. From a pragmatic perspective, this major finding suggests that what managers can do to increase levels of visitor satisfaction may be directed toward different attributes than those managers would influence if their goal was to decrease dissatisfaction. Our research also points to the finding that attributes leading to satisfaction are not directly controllable by managers. Scenery is an example. This attribute appears to be a universal source of satisfaction. Most recreation management actions considered by managers can have little direct impact on the inherent nature of scenic beauty and diversity. Other than allowing significant disruptions of the visual resource--such as timber harvesting--managers are "stuck" with an area's inherent beauty.

On the other hand, it seems that those factors leading to feelings of dissatisfaction may be impacted through managerial intervention. Encountering other

recreationists was reported by our sample as a major source of dissatisfaction. Through a variety of methods, the location and frequency of these encounters can be controlled or affected.

We have several other comments about this second finding. Significantly, for some attributes cited as a source of satisfaction (or dissatisfaction) the lack of encountering the attribute did not lead to dissatisfaction (or satisfaction). This is also consistent with Herzberg's theory. For example, the lack of scenery was never cited by our respondents as a source of dissatisfaction even though the lower part of the RNRAW (where most of our sample hiked into) could not be described as scenically outstanding. Again, the lack of encounters with other types of recreationists was not indicated as a source of satisfaction in the study.

A third major finding was the lack of significant association of an overall measure of satisfaction with most major study variables. This again is consistent with the focus of this research and suggests, again, the unfortunate reliance many have place on such a measure. There now should be no question that single item, psychometrically additive satisfaction scales have severe conceptual, methodological, and practical drawbacks.

The foregoing results are consistent with the propositions of Herzberg. However, we had suggested that

attributes vary in their saliency depending on how the visitor defines the experience. Further, we had suggested that it is only the salient attribute that will be a source of satisfaction or dissatisfaction. To test these hypotheses, we used the concept of social-psychological outcomes to identify how visitors defined their experiences. We had hoped that a clear definition of an experience would be strongly related to the saliency of a specific attribute. For example, visitors defining solitude as very important would be expected to more likely define encounters with other recreationists as a salient attribute.

Our results here were, frankly, marginal. Our methodological approach to determining the importance of outcomes to respondents relied on splitting the sample on the mean. For those above the mean, outcomes were more important than for those below the mean. We expected respondents with above mean scores to identify more attributes as salient than those below the mean. While many of the tests were in the direction hypothesized, two problems occured. First, most of the statistical tests of significance did not meet the .05 criterion; most would not have met a .10 criterion. This result may have been affected by our use of the mean to split the sample in half. Simply put, many of the respondents were not "different" enough from each other (we needed more

systematic variance in the sample). Using quartiles would be desirable--however, the small sample size prohibited this technique.

The second problem is one of interpretation. While the direction--if not statistical significance--of our hypotheses was clear in many cases, the data was difficult to interpret. For example, respondents scoring above the mean would more likely evaluate an attribute as a source of satisfaction or dissatisfaction than those scoring below the mean. The question is, how does one interpret the data where it is not only counter to the trend but also to the hypothesis.

In our study, we hypothesized that amounts of dissatisfaction would be associated with specific comments on behavioral intentions for future visits or on managerial improvements. Unfortunately, the sample size was so small that no real test of this hypothesis could be made.

In summary, our feeling is that our translation of Herzberg's Two Factor Theory was supported at a general level, but needs improvement at the more specific level of the concept of saliency. Three recommendations are made: First, an increase in sample size is necessary to use upper and lower quartiles on the outcome domain scales. It would be desirable to have about one hundred respondents in each quartile for an adequated statistical test. Second, there is a need to evaluate the approach in other recreational

settings to confirm the results discussed here as well as to develop guidelines for implementation. Finally, as discussed in the Results section, some changes are needed in the questionnaire for additional control for extraneous influences.

The reader has noted that we have substantially modified and added to Herzberg's original statement. Importantly, we have developed the concept of saliency as a significant component of our approach to satisfaction in recreational settings. For this reason, we have renamed our articulation of the two factor theory to more accurately reflect its current structure: the Multiple Attribute-Saliency Theory of Recreational Satisfaction.

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VOLUME II

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TABLE OF CONTENTS

VOLUME II

Appendix A:	Data Tables	1
Appendix B:	Items Composing Outcome Domain Scales	41
Appendix C:	Items Composing Classified Setting Attributes.	43
Appendix D:	The Questionnaire	50
Appendix E:	Sampling Plan	58
Appendix F:	Cover and Followup Letters.	61

APPENDIX A: DATA TABLES

Table A-1. Visitors experiencing satisfaction and dissatisfaction on trip, in percent.

		Experienced Dissatisfaction	
		YES	NO
Experienced Satisfaction	YES	42.0	52.0
	NO	2.0	4.0

$\chi^2 = 3.05$ $p \leq .2179$

Table A-2. Respondent reactions to setting and trip attributes as sources of satisfaction or dissatisfaction, in percent.

Attribute	Satisfier	Dissatisfier	Neither
Trail Conditions	89.3%	10.7%	22.2%
Weather	94.5	5.5	15.7
Insects	53.1	46.9	54.6
Personal Recreation Equipment	81.6	18.4	64.8
Management of Area	86.1	13.9	33.3
Scenery	98.1	1.9	2.8
Litter	43.3	56.7	38.0
Meet or See Other Similar Recreationists	64.9	35.9	63.9
Meet or See Other Types of Recreationists	32.6	67.4	57.4
Dogs	65.4	34.6	51.9
Wildlife	97.7	2.3	20.4
Lakes	98.6	1.4	36.1
Streams	100.0	0.0	4.6
People I Traveled With	100.0	0.0	23.1
The Group Leader	73.3	26.7	86.1
Responsibilities I Had on Trip	90.6	9.4	70.4
The Activity Itself	96.8	3.2	13.0
Improving Activity Skill Level	94.7	5.3	47.2
Personal Physical Condition	92.7	7.3	24.1
The Route Our Group Took	91.5	8.5	34.3

Table A-3. Attributes cited as source of satisfaction or trip high point in percent.

Attribute	Source of Satisfaction (N = 144)	Indicated as a High Point (N = 160)
Solitude	21.5%	16.9%
Activity	16.0	16.9
Social Setting	9.0	
Enjoy with Others	3.5	7.5
Scenery	41.0	45.0
Physical Setting	1.4	5.0
Achievement	4.2	
Locational Characteristics	3.5	16.9
Weather		1.9
Trails		0.6
Biophysical Setting		6.3

Table A-4. Attributes cited as sources of dissatisfaction point, in percent.

Attribute	Source of Dissatisfaction (N = 53)	Indicated as a low point (N = 100)
Insects and Weather	7.6	28.0
Managerial Setting	30.2	23.0
Social Setting	32.0	28.0
Motorcycles	22.6	18.0
Biophysical Setting	5.7	7.0
Personal and Group Characteristics	24.5	14.0

Table A-5. Summary of attribute classes cited as trip high points/satisfaction or low points/dissatisfaction.

Attribute Class	High/Satisfaction	Low/Dissatisfaction
Weather, Environment		X
Managerial Setting		X
Social Setting	X	
Motorcycles		X
Enjoy with Others	X	
Biophysical Setting/ Human Impact	X	X
Personal Factors		X
Solitude	X	
Scenery	X	
Trails	X	
Activity Itself	X	
Location	X	
Wilderness	X	
Trip Purpose	X	

Table A-6. Attributes which are cited as sources of dissatisfaction by activity, in percent.

Attribute	ACITIVITY						
	Looking at Rocks and Geological Formations (N = 26)	Nature Study (N = 21)	View Scenery (N = 43)	Relaxing (N = 34)	Exploring (N = 22)	Hiking (N = 40)	Watching Wildlife (N = 30)
Insects and Weather	11.5	4.8	9.3	8.8	13.6	7.5	10.0
Managerial Setting	23.1	38.1	37.2	35.3	31.8	40.0	33.3
Social Setting	34.6	38.1	34.9	41.2	22.7	32.5	23.3
Motorcycles	30.8	33.3	25.6	26.5	18.2	25.0	20.0
Biophysical Setting	7.7	14.3	7.0	8.8	9.1	7.5	6.7
Personal and Group Attributes	38.5	28.6	30.2	26.5	40.9	32.5	40.0

Table A-7. Attributes cited as reasons for trip low point by activity, in percent.

Attribute	ACTIVITY							
	Looking at Rocks and Geological Formations (N = 42)	Nature Study (N = 32)	View Scenery (N = 73)	Camping (N = 20)	Relaxing (N = 61)	Exploring (N = 34)	Hiking (N = 67)	Watching Wildlife
Insects and Weather	45.2	37.5	37.0	25.0	32.8	32.3	38.8	40.0
Managerial Setting	31.0	46.9	31.5	45.0	29.5	47.1	31.3	32.0
Social Setting	40.5	43.7	37.0	15.0	42.6	38.3	32.4	32.0
Motorcycles	26.2	28.1	24.7	15.0	29.5	32.4	22.4	22.0
Biophysical Setting	0.0	15.6	9.6	15.0	9.8	14.7	9.0	14.0
Personal and Group Characteristics	16.7	6.5	17.8	45.0	16.4	14.7	19.4	18.0
Other								

Table A-8. Outcome domains identified in cluster analysis and Cronbach's alpha reliability coefficient.*

Outcome Domain	Cronbach's Alpha
Scenery Appreciation	.84
Learning about Nature	.79
Achievement	.74
Exercise	.91
Affiliation	.87
Solitude-Stress Release	.72

* Specific items comprising each scale can be found in Appendix B.

Table A-9. Saliency of setting attributes for respondents scoring above mean on each outcome domain.*

Attribute	Learning About Nature	Exercise	Domain Achievement	Affiliation	Scenery Appreciation	Solitude Stress Release Balance
Trails	S	S	S	S	S	S
Weather	S	S	S	S	S	S
Insects	N	N	N	N	N	N
Recreation Equipment	N	N	N	N	N	N
Area Management	N	N	N	N	S	N
Scenery	S	S	S	S	S	S
Litter	N	N	N	N	N	N
Meet Other Similar Recreationists	N	N	N	N	N	N
Meet Other Types of Recreationists	N	N	N	N	N	N
Dogs	N	N	N	N	N	N
Wildlife	S	S	S	S	S	S
Lakes	N	N	N	N	N	N
Streams	S	S	S	S	S	S
People in Group	S	N	S	S	S	S
Group Leader	N	N	N	N	N	N
Visitor Responsibilities	N	N	N	N	N	N
Activity Itself	S	S	S	S	S	S
Personal Physical Condition	S	S	S	N	N	S
Route Taken	N	S	S	S	N	N
Skill Improvement	N	S	S	N	N	N

* If more than 25% of respondents chose the "Neither" category, attribute was defined as non-salient. S indicates a salient attribute; blank space indicates a non-salient attribute.

Table A-10. Evaluation of setting and trip attributes by score on Learning About Nature outcome domain, in percent.

	Attribute is a source of . . .					
	Satisfaction		Dissatisfaction		Neither	
Scale Score:	LOW	HIGH	LOW	HIGH	LOW	HIGH
Attribute:						
Trail Conditions	71.7	70.7	11.3	5.2	17.0	24.1
Weather	81.1	78.3	7.5	1.5	11.3	20.0
Insects	23.1	26.7	19.2	21.7	57.7	51.7
Personal Recreational Equipment	31.4	28.6	3.9	8.9	64.7	62.5
Management of Area	63.5	53.3	5.8	11.7	30.8	35.0
Scenery	94.2	95.0	0.0	3.3	5.8	1.7
Litter*	28.8	25.9	26.9	48.3	44.2	25.9
Meet or See Other Similar Recreationists	15.1	31.0	17.0	8.6	67.9	60.3
Meet or See Other Types of Recreationists	11.8	15.8	27.5	31.6	60.8	52.6
Dogs	24.5	35.0	18.9	15.0	56.6	50.0
Wildlife	71.7	82.8	1.9	1.7	26.4	15.5
Lakes	58.5	66.1	3.8	0.0	37.7	33.9
Streams	90.2	98.3	2.0	0.0	7.8	1.7
People I Traveled With	78.8	79.7	0.0	0.0	21.2	20.3
The Group Leader	19.6	5.5	3.9	3.6	76.5	90.9
Responsibilities I had on Trip	27.5	29.8	2.0	3.5	70.6	66.7
The Activity Itself	88.0	91.2	2.0	3.5	10.0	5.3
Improving Activity Skill Level*	41.2	62.5	2.0	3.6	56.9	33.9
Personal Physical Condition	69.2	73.7	7.7	5.3	23.1	21.1
The Route Our Group Took	62.0	67.9	8.0	3.6	30.0	28.6

* Differences statistically significant at $\alpha \leq .06$.

Table A-11. Evaluation of setting and trip attributes by score on Exercise outcome domain, in percent.

	Attribute is a source of . . .					
	Satisfaction		Dissatisfaction		Neither	
Scale Score: Attribute:	LOW	HIGH	LOW	HIGH	LOW	HIGH
Trail Conditions	70.2	71.9	6.4	9.4	23.4	18.8
Weather	72.9	84.6	8.3	1.5	18.8	13.8
Insects	17.0	30.8	23.4	18.5	59.6	50.8
Personal Recreational Equipment	29.8	30.0	8.5	5.0	61.7	65.0
Management of Area	55.3	60.0	8.5	9.2	36.2	30.8
Scenery	93.8	95.3	2.1	1.6	4.2	3.1
Litter	23.4	30.2	48.9	30.2	27.7	39.7
Meet or See Other Similar Recreationists	18.8	27.0	18.8	7.9	62.5	65.1
Meet or See Other Types of Recreationists	11.1	15.9	33.3	27.0	55.6	57.1
Dogs	27.1	32.3	14.6	18.5	58.3	49.2
Wildlife	78.7	76.6	2.1	1.6	19.1	21.9
Lakes	62.5	62.5	4.2	0.0	33.3	37.5
Streams	90.2	98.3	2.0	0.0	7.8	1.7
People I Traveled With	85.1	75.0	0.0	0.0	14.9	25.0
The Group Leader*	13.3	11.5	8.9	0.0	77.8	88.5
Responsibilities I had on Trip*	19.6	35.5	6.5	0.0	73.9	64.5
The Activity Itself	84.8	93.4	4.3	1.6	10.9	4.9
Improving Activity Skill Level*	31.1	67.7	4.4	1.6	64.4	30.6
Personal Physical Condition*	41.3	93.7	10.9	3.2	47.8	3.2
The Route Our Group Took	60.0	68.9	6.7	4.9	33.3	26.2

Table A-12. Evaluation of setting and trip attributes by score on Achievement outcome domain, in percent.

	Attribute is a source of . . .					
	Satisfaction		Dissatisfaction		Neither	
Scale Score:	LOW	HIGH	LOW	HIGH	LOW	HIGH
Attribute:						
Trail Conditions	64.3	78.2	8.9	7.3	26.8	14.5
Weather	80.4	78.9	5.4	3.5	14.3	17.5
Insects	21.8	28.1	16.4	24.6	61.8	47.4
Personal Recreational Equipment	20.8	38.9	5.7	7.4	73.6	53.7
Management of Area	58.2	57.9	5.5	12.3	36.4	29.8
Scenery	96.4	92.9	0.0	3.6	3.6	3.6
Litter	23.6	30.9	32.7	43.6	43.6	25.5
Meet or See Other Similar Recreationists*	12.5	34.5	21.4	3.6	66.1	61.8
Meet or See Other Types of Recreationists*	5.7	21.8	34.0	25.5	60.4	52.7
Dogs	26.8	33.3	14.3	19.3	58.9	47.4
Wildlife	73.2	81.8	1.8	1.8	25.0	16.4
Lakes	60.7	64.3	3.6	0.0	35.7	35.7
Streams	90.9	98.2	1.8	0.0	7.3	1.8
People I Traveled With*	87.3	71.4	0.0	0.0	12.7	28.6
The Group Leader	15.1	9.4	7.5	0.0	77.4	90.6
Responsibilities I had on Trip*	20.8	36.4	5.7	0.0	73.6	63.6
The Activity Itself	88.7	90.7	1.9	3.7	9.4	5.6
Improving Activity Skill Level*	22.6	81.5	3.8	1.9	73.6	16.7
Personal Physical Condition*	55.6	87.3	9.3	3.6	35.2	9.1
The Route Our Group Took	61.5	68.5	5.8	5.6	32.7	25.9

Table A-13. Evaluation of setting and trip attributes by score on Affiliation outcome domain, in percent.

	Attribute is a source of . . .					
	Satisfaction		Dissatisfaction		Neither	
Scale Score:	LOW	HIGH	LOW	HIGH	LOW	HIGH
Attribute:						
Trail Conditions*	72.9	69.8	0.0	14.3	27.1	15.9
Weather	77.6	81.6	2.0	6.3	20.4	12.5
Insects	28.6	22.2	16.3	23.8	55.1	54.0
Personal Recreational Equipment	30.4	29.5	8.7	4.9	60.9	65.6
Management of Area*	47.9	65.6	6.3	10.9	45.8	23.4
Scenery	95.8	93.8	0.0	3.1	4.2	3.1
Litter	23.4	30.2	48.9	30.2	27.7	39.7
Meet or See Other Similar Recreationists	20.4	25.8	14.3	11.3	65.3	62.9
Meet or See Other Types of Recreationists	10.6	16.4	31.9	27.9	57.4	55.7
Dogs	22.4	35.9	14.3	18.8	63.3	45.3
Wildlife	77.6	77.4	0.0	3.2	22.4	19.4
Lakes	67.3	58.7	2.0	1.6	30.6	39.7
Streams*	89.6	98.4	0.0	1.6	10.4	0.0
People I Traveled With*	58.3	95.2	0.0	0.0	41.7	4.8
The Group Leader*	6.7	16.4	0.0	6.6	93.3	77.0
Responsibilities I had on Trip*	13.0	40.3	0.0	4.8	87.0	54.8
The Activity Itself	80.4	96.7	2.2	3.3	17.4	0.0
Improving Activity Skill Level	60.0	46.8	2.2	3.2	37.8	50.0
Personal Physical Condition	70.2	72.6	6.4	6.5	23.4	21.0
The Route Our Group Took*	56.8	71.0	2.3	8.1	40.9	21.0

Table A-14. Evaluation of setting and trip attributes by score on Scenery Appreciation outcome domain, in percent.

	Attribute is a source of . . .					
	Satisfaction		Dissatisfaction		Neither	
Scale score:	LOW	HIGH	LOW	HIGH	LOW	HIGH
Attribute:						
Trail Conditions	65.3	75.8	8.2	8.1	26.5	16.1
Weather*	68.0	88.9	10.0	0.0	22.0	11.1
Insects*	16.3	31.7	30.6	12.7	53.1	55.6
Personal Recreational Equipment	29.8	30.0	8.5	5.0	61.7	65.0
Management of Area	57.1	58.7	10.2	7.9	32.7	33.3
Scenery	91.8	96.8	2.0	1.6	6.1	1.6
Litter*	31.3	24.2	27.1	46.8	41.7	29.0
Meet or See Other Similar Recreationists	32.0	16.4	12.0	13.1	56.0	70.5
Meet or See Other Types of Recreationists	18.8	10.0	25.0	33.3	56.3	56.7
Dogs	32.0	28.6	18.0	15.9	50.0	55.6
Wildlife	70.8	82.5	4.2	0.0	25.0	17.5
Lakes*	52.0	71.0	4.0	0.0	44.0	29.0
Streams	89.8	98.4	2.0	0.0	8.2	1.6
People I Traveled With	83.7	75.8	0.0	0.0	16.3	24.2
The Group Leader*	22.2	4.9	4.4	3.3	73.3	91.8
Responsibilities I had on Trip	30.4	27.4	2.2	3.2	67.4	69.4
The Activity Itself	91.3	88.5	2.2	3.3	6.5	8.2
Improving Activity Skill Level	60.8	46.8	2.2	3.2	37.8	50.0
Personal Physical Condition	74.5	69.4	6.4	6.5	19.1	24.2
The Route Our Group Took	65.9	64.5	6.8	4.8	27.3	30.6

Table A-15. Evaluation of setting and trip attributes by score on Solitude-Stress Release outcome domain, in percent.

	Attribute is a source of . . .					
	Satisfaction		Dissatisfaction		Neither	
Scale score:	LOW	HIGH	LOW	HIGH	LOW	HIGH
Attribute:						
Trail Conditions	67.2	75.5	6.9	9.4	25.9	15.1
Weather	78.0	81.5	8.5	0.0	13.6	18.5
Insects*	15.5	35.2	22.4	18.5	62.1	46.3
Personal Recreational Equipment	28.6	31.4	7.1	5.9	64.3	62.7
Management of Area	55.2	61.1	8.6	9.3	36.2	29.6
Scenery	91.4	89.1	1.7	1.9	6.9	0.0
Litter	35.7	18.5	32.1	44.4	32.1	37.0
Meet or See Other Similar Recreationists	22.0	25.0	13.6	11.5	64.4	63.5
Meet or See Other Types of Recreationists	10.7	17.3	30.4	28.8	58.9	53.8
Dogs	35.6	24.1	20.3	13.0	44.1	63.0
Wildlife	72.4	83.0	3.4	0.0	24.1	17.0
Lakes	59.3	66.0	3.4	0.0	37.3	34.0
Streams*	89.7	100.0	1.7	0.0	8.6	0.0
People I Traveled With	82.5	75.5	0.0	0.0	17.2	24.5
The Group Leader	16.7	7.7	5.6	1.9	77.8	90.4
Responsibilities I had on Trip	23.6	84.0	3.6	1.9	72.7	64.2
The Activity Itself	85.5	94.2	3.6	1.9	10.9	3.8
Improving Activity Skill Level*	42.6	62.3	5.0	0.0	51.9	37.7
Personal Physical Condition	64.3	79.2	8.9	3.8	26.8	17.0
The Route Our Group Took	64.2	66.0	7.5	3.8	28.3	30.2

Table A-16. Relative frequency of attributes cited as source of satisfaction by score on Learning About Nature outcome domain.*

	Score	
Attribute Class:	Low (N = 44)	High (N = 55)
Solitude	38.6%	25.5%
Activity	27.3	25.5
Social Setting	6.8	9.1
Enjoy with Others	9.1	1.8
Scenery	54.5	63.6
Wildness	4.5	14.5
Achieved Trip Purpose	6.8	5.5
Other	2.3	7.3

* Percentages add to more than 100 because respondents could cite more than one satisfying attribute.

Table A-17. Relative frequency of attributes cited as source of satisfaction by score on Exercise outcome domain.

	Score	
Attribute Class:	Low	High
Solitude	33.3%	30.0%
Activity	28.2	25.0
Social Setting	12.8	5.0
Enjoy with Others	7.7	3.3
Scenery	43.6	70.0
Wildness	15.4	6.7
Achieved Trip Purpose	5.1	6.7
Other	0.0	8.3

Table A-18. Relative frequency of attributes cited as source of satisfaction by score on Achievement outcome domain.

	Score	
Attribute Class:	Low	High
Solitude	36.2	26.9
Activity	23.4	28.8
Social Setting	8.5	7.7
Enjoy with Others	8.5	1.9
Scenery	46.8	71.2
Wildness	12.8	7.7
Achieved trip purpose	16.4	5.8
Other	2.1	7.7

Table A-19. Relative frequency of attributes cited as source of satisfaction by score on Affiliation outcome domain.

	Score	
Attribute Class:	Low	High
Solitude	32.5%	30.5%
Activity	17.5	32.2
Social Setting	5.0	10.2
Enjoy with Others	2.5	6.8
Scenery	60.0	59.3
Wildness	12.5	8.5
Achieved Trip Purpose	5.0	6.8
Other	10.0	1.7

Table A-20. Relative frequency of attributes cited as source of satisfaction by score on Scenery Appreciation outcome domain.

	Score	
Attribute Class:	Low	High
Solitude	34.1%	29.3%
Activity	24.4	27.6
Social Setting	7.3	8.6
Enjoy with Others	4.9	5.2
Scenery	70.7	51.7
Wildness	2.4	15.5
Achieved Trip Purpose	9.8	3.4
Other	2.4	6.9

Table A-21. Relative frequency of attributes cited as source of satisfaction by score on Solitude-Stress Release outcome domain.

	Score	
Attribute Class:	Low	High
Solitude	22.0	40.8
Activity	22.0	30.6
Social Setting	4.0	12.2
Enjoy with Others	10.0	0.0
Scenery	58.0	61.2
Wildness	8.0	12.2
Achieved Trip Purpose	10.0	2.0
Other	6.0	4.1

Table A-22. Relative frequency of attributes cited as trip high point by score on Learning About Nature outcome domain.

	Score	
Attribute Class:	Low (N = 50)	High (N = 56)
Solitude	26.0%	25.0%
Scenery	76.0	66.1
Enjoy with Others	8.0	14.3
Trails	2.0	0.0
Activity Itself	24.0	30.4
Locational Characteristics	10.0	5.4
Biophysical Setting	12.0	16.1

Table A-23. Relative frequency of attributes cited as trip high point by score on Exercise outcome domain.

	Score	
Attribute Class:	Low (N = 46)	High (N = 60)
Solitude	28.3%	23.3%
Scenery	45.7	90.0
Enjoy with Others	10.9	11.7
Trails	2.2	0.0
Activity Itself	32.6	23.3
Locational Characteristics	13.0	3.3
Biophysical Setting	15.2	13.3

Table A-24. Relative frequency of attributes cited as trip high point by score on Achievement outcome domain.

Attribute Class:	Score: Low (N = 53)	Score: High (N = 53)
Solitude	30.2%	20.8%
Scenery	66.0	75.5
Enjoy with Others	5.7	17.0
Trails	1.9	0.0
Activity Itself	26.4	28.3
Locational Characteristics	11.3	3.8
Biophysical Setting	13.2	15.1

Table A-25. Relative frequency of attributes cited as trip high point by score on Affiliation outcome domain.

	Score	
Attribute Class:	Low (N = 48)	High (N = 58)
Solitude	18.8%	15.0%
Scenery	54.2	84.5
Enjoy with Others	2.1	19.0
Trails	2.1	0.0
Activity Itself	37.5	19.0
Locational Characteristics	6.3	8.6
Biophysical Setting	22.9	6.9

Table A-26. Relative frequency of attributes cited as trip high point by score on Scenery Appreciation outcome domain.

	Score	
Attribute Class:	Low (N = 45)	High (N = 61)
Solitude	17.8%	31.1%
Scenery	77.8	65.6
Enjoy with Others	20.0	4.9
Trails	2.2	0.0
Activity Itself	33.3	23.0
Locational Characteristics	6.7	8.2
Biophysical Setting	6.7	19.7

Table A-27. Relative frequency of attributes cited as trip high point by score on Solitude-Stress Release outcome domain.

	Score	
Attribute Class:	Low (N = 54)	High (N = 52)
Solitude	14.8%	36.5%
Scenery	70.4	71.2
Enjoy with Others	11.1	11.5
Trails	0.0	1.9
Activity Itself	35.2	19.2
Locational Characteristics	5.6	9.6
Biophysical Setting	9.3	19.2

Table A-28. Relative frequency of attributes cited as source of dissatisfaction by score on Learning About Nature outcome domain.

	Score	
Attribute Class:	Low (N = 19)	High (N = 26)
Weather, Environmental Factors	5.3%	11.5%
Managerial Setting	42.1	30.8
Social Setting	15.8	7.7
Motorcycles	42.1	38.5
Human Impact	5.3	7.7
Personal Factors	10.5	23.1

Table A-29. Relative frequency of attributes cited as source of dissatisfaction by score on Exercise outcome domain.

	Score	
Attribute Class:	Low (N = 19)	High (N = 26)
Weather, Environmental Factors	15.8%	3.8%
Managerial Setting	31.6	38.5
Social Setting	10.5	11.5
Motorcycles	36.8	42.3
Human Impact	5.3	7.7
Personal Factors	15.8	19.2

Table A-30. Relative frequency of attributes cited as source of dissatisfaction by score on Achievement outcome domain.

	Score	
Attribute Class:	Low (N = 22)	High (N = 23)
Weather, Environmental Factors	0.0%	17.3%
Managerial Setting	40.9	30.4
Social Setting	13.6	8.7
Motorcycles	50.0	30.4
Human Impact	9.1	4.3
Personal Factors	4.5	30.4

Table A-31. Relative frequency of attributes cited as source of dissatisfaction by score on Affiliation outcome domain.

	Score	
Attribute Class:	Low (N = 18)	High (N = 27)
Weather, Environmental Factors	11.1%	7.4%
Managerial Setting	33.3	37.0
Social Setting	5.6	14.8
Motorcycles	38.9	40.7
Human Impact	11.1	3.7
Personal Factors	16.7	18.5

Table A-32. Relative frequency of attributes cited as source of dissatisfaction by score on Scenery Appreciation outcome domain.

	Score	
Attribute Class:	Low (N = 20)	High (N = 25)
Weather, Environmental Factors	15.0	4.0
Managerial Setting	50.0	24.0
Social Setting	10.0	12.0
Motorcycles	25.0	52.0
Human Impact	10.0	4.0
Personal Factors	25.0	12.0

Table A-33. Relative frequency of attributes cited as source of dissatisfaction by score on Solitude-Stress Release outcome domain.

	Score	
Attribute Class:	Low (N = 25)	High (N = 20)
Weather, Environmental Factors	12.0%	5.0%
Managerial Setting	36.0	35.0
Social Setting	12.0	10.0
Motorcycles	40.0	40.0
Human Impact	12.0	0.0
Personal Factors	16.0	20.0

Table A-34. Relative frequency of attributes cited as trip low point by score on Learning About Nature outcome domain.

	Score	
Attribute Class:	Low (N = 40)	High (N = 46)
Weather, Environmental Factors	25.0%	26.1%
Managerial Setting	20.0	32.6
Social Setting	20.0	8.7
Motorcycles	32.5	26.1
Biophysical Setting	7.5	15.2
Personal Factors	17.5	23.9

Table A-35. Relative frequency of attributes cited as trip low point by score on Exercise outcome domain.

	Score	
Attribute Class:	Low (N = 40)	High (N = 46)
Weather, Environmental Factors	25.0%	26.1%
Managerial Setting	17.5	34.8
Social Setting	15.0	13.0
Motorcycles	27.5	30.4
Biophysical Setting	12.5	10.9
Personal Factors	27.5	15.2

Table A-36. Relative frequency of attributes cited as trip low point by score on Achievement outcome domain.

Attribute Class:	Score: Low (N = 42)	Score: High (N = 44)
Weather, Environmental Factors	19.0%	31.8%
Managerial Setting	28.6	25.0
Social Setting	21.4	6.8
Motorcycles	31.0	27.3
Biophysical Setting	9.5	13.6
Personal Factors	19.0	22.7

Table A-37. Relative frequency of attributes cited as trip low point by score on Affiliation outcome domain.

	Score	
Attribute Class:	Low (N = 32)	High (N = 54)
Weather, Environmental Factors	15.6%	31.5%
Managerial Setting	28.1	25.9
Social Setting	9.4	16.7
Motorcycles	31.3	27.8
Biophysical Setting	9.4	13.0
Personal Factors	28.1	16.7

Table A-38. Relative frequency of attributes cited as trip low point by score on Scenery Appreciation outcome domain.

	Score	
Attribute Class:	Low (N = 37)	High (N = 49)
Weather, Environmental Factors	32.4%	20.4%
Managerial Setting	21.6	30.6
Social Setting	10.8	16.3
Motorcycles	16.2	38.8
Biophysical Setting	10.8	12.2
Personal Factors	27.0	16.3

Table A-39. Relative frequency of attributes cited as trip low point by score on Solitude-Stress Release outcome domain.

	Score	
Attribute Class:	Low (N = 41)	High (N = 45)
Weather, Environmental Factors	29.3%	22.2%
Managerial Setting	19.5	33.3
Social Setting	19.5	8.9
Motorcycles	22.0	35.6
Biophysical Setting	4.9	17.8
Personal Factors	24.4	17.8

APPENDIX B: ITEMS COMPOSING OUTCOME DOMAIN SCALES

Appendix B. Items Composing Outcome Domain Scales.

Domain	Item
Scenery Appreciation	to observe the scenic beauty
	to enjoy the smells and sounds of nature
	so I can take in some natural surroundings
Learning About Nature	to understand the natural world better
	to learn more about nature
Exercise	to improve my physical health
	to help keep me in shape
Affiliation	so I could do things with my companions
	to be with others who enjoy the same things I do
Solitude-Stress Release	for the solitude
	so my mind could move at a slower pace
	to help reduce or release some built-up tensions
	to get away from some of the expectations people have of me back home
Achievement	to develop my skills and ability
	because I thought it would be a challenge
	so I could become better at it
	for the adventure

APPENDIX C: ITEMS COMPOSING CLASSIFIED SETTING ATTRIBUTES

Table C-1. Classification of Attributes Cited as Contributing to Satisfaction

---

Solitude
- quiet
- solitude
- away from city
- closer to God

Acitvity
- observe geology
- sleeping
- sketching
- wading
- relaxing
- swimming
- hiking
- fishing
- pick apples
- exploring

Managerial setting
- clean area
- no cars
- reached no MC area

Enjoy with others
- enjoy with friends
- enjoy with children

Scenery
- predawn
- weather
- bear in blueberries
- hear nature's sounds
- scenery
- wildlife
- wild flowers
- creek
- view of Stuart Peak
- view of lakes
- seeing moon

Wildness
- wildness
- nothing manmade
- area is wilderness

Achieved purpose
- adventure
- campfire at night
- arrived at destination
- accomplish task

Other
- area close to city
- nice motorcyclist

Table C-2. Classification of Free Response High Point Statements.

Solitude
- quiet
- solitude

Scenery
- scenery
- wildlife
- wildflowers
- creek
- sunrise
- view of Stuart Peak
- lakes
- gorge at Lake Creek Road
- hear nature
- stars
- weather
- sunshine

Enjoy with others
- enjoy with friends
- enjoy with others

Weather and environmental factors
- weather
- sunrise

Trails
- trails

Activity
- beer
- move body
- relaxing
- swimming
- hiking
- fishing
- camping
- exploring
- survival
- wading
- hike in thunderstorm
- cooking by creek
- reaching hills
- sleeping
- picking wild berries

Locational characteristics
- area is away from city
- area is close to city

Physical setting
- clean
- nothing manmade
- wildness
- no traffic
- entire area

Table C-3. Classification of Free Response Dissatisfaction Items

---

Insects, weather, environmental factors
- insects
- rain
- no water

Managerial setting
- questionnaire
- oil drilling
- road or trail
- bridge rebuilt
- must pass through NRA to wilderness
- horses near campsite
- no trails near creek
- horse manure
- clearcut
- litter
- too few campsites
- should have auto access

Social setting
- too many people
- loose dogs
- hikers bothering motorcyclists
- illegal motorcycles
- loud motorcycles
- trails closed to motorcycles
- motorcycles
- motorcycle fumes

Biophysical setting
- human impact
- unattended campfire
- campsite cramped

Personal and group characteristics
- sick friend
- lost trail
- no time to fish
- not in shape
- hike too long
- not enough time

Table C-4. Classification of Free Response Low Point Statements

---

Insects, weather, and environmental factors
- insects
- hot weather
- no water
- airplane noise
- hard ground
- rain

Managerial setting
- no trails along creek
- litter
- clearcut
- roads
- eroded trails
- horses near campsite
- old fire rings
- questionnaire
- horse manure
- campsite cramped

Social setting
- loose dogs
- too many people
- hippies
- motorcycles
- guns

Biophysical setting
- view of Missoula
- no big game
- see no wildlife
- not as scenic as expected
- seeing burned bridge
- weeds
- less wilderness

Personal and group characteristics
- lost trail
- sick friend
- turned back because of friend
- driving home
- depending on friend
- dog getting hurt
- wet sleeping bag
- out of shape
- leaving the area
- waking up in the morning
- cold hands

Table C-5. Classification of Identified Managerial Changes

Motorcycles
- no motorcycles
- require quiet motorcycles
- allow motorcycles to first bridge
- allow motorcycles to second bridge
- keep the same motorcycle restrictions
- enforce motorcycle rules
- no motorcycles beyond the entrance
- put in more motorcycle trails
- keep trails open to all users
- either allow motorcycles in all areas, or keep them out
- place pollution restrictions on motorcycle noise

Bridge
- rebuild bridge
- don't rebuild bridge

Trail management
- turn the road into a trail
- develop trails along the creek
- mark trails better
- map the minor trails
- maintain trails
- put in more mileage markers
- develop a bikeway
- develop more trails

Public transportation and access
- allow car travel in the NRA
- provide for public transportation to the bridge
- develop Grant Creek access
- provide for access for handicapped
- provide for public transportation to the NRA

Campsite management
- develop more campsites along the lakes
- provide campfire regulations
- have campsite regulations
- develop more campsites

Wilderness
- place no signs in the wilderness
- make the area all wilderness

Wastes management
- pick up litter
- fine litterers
- provide outhouses

People limits
- limit number of people

Horse management
- prohibit horses
- educate horse users

Other
- put fish in creek
- provide information about lack of water on trail
- maintain current management
- provide information about water quality
- prohibit plane over flights
- remove rusty wire
- remove knapweed
- introduce native vegetation
- introduce wildlife
- prohibit power lines
- maintain a high ranger profile
- improve parking
- develop picnic area at gate
- no government
- ban guns

Table C-6. Classification of Identified Behavioral Changes

Trip organization
- take more water
- thicker socks
- check weather
- go when cooler
- make sure group members are of equal physical condition
- bring fruit on trip

Spatial changes
- hike main Rattlesnake trail
- don't hike main Rattlesnake trail
- visit more lakes
- go further
- try new trails

Temporal changes
- stay longer
- go overnight
- start earlier

Activity changes
- go fishing
- bring camera
- bring binoculars
- take book
- go sledding

Social changes
- bring more friends

Other
- obstruct trail

APPENDIX D: THE QUESTIONNAIRE

RATTLESNAKE
RECREATION AREA
VISITOR SURVEY

School of Forestry
University of Montana

UNIVERSITY OF MONTANA

School of Forestry
Missoula, Montana 59812

Rattlesnake Recreation Area Visitor Survey

Please answer all questions as they relate to your most recent visit to the Rattlesnake watershed.

Describing Your Visit

1. Was this your first visit to the Rattlesnake watershed?

   ____Yes (if yes, please go to Question 2)

   ____No (if no, please answer the following)

   a) In what year did you first visit the Rattlesnake? 19____
   b) Including your recent visit about how many times have you visited the Rattlesnake?

   _____1-3 _____8-12

   _____4-7 _____over 12

2. During your recent visit to the Rattlesnake, what type of group were you with?

   _____alone _____club or organized group_____ (please give name or type)

   _____family _____other (please describe)_____

   _____friends _____

   _____family & friends

3. About how many people were in your group including yourself?

   _____1-2 _____7-10

   _____3-4 _____11 or more

   _____5-6

4. Did you camp overnight in the Rattlesnake on this visit?

   _____Yes _____No

5. During your most recent visit what was your primary method of travel?

   _____jogging/running _____horseback riding

   _____walking/hiking _____bicycling

   _____motorcycle _____other_____

6. Please check each of the following activities you participated in during your most recent visit to the Rattlesnake. Please check all the activities you participated in.

_____looking at rocks & geological formations	_____camping	_____playing games, sports
_____swimming	_____hunting	_____hiking and walking
_____rock climbing	_____fishing	_____photography
_____nature study	_____relaxing	_____watching wildlife
_____viewing scenery	_____exploring	_____other, please specify_____

_____

7. During your last visit did you observe any wildlife?

_____no _____yes--if yes, please list_____

_____

8. About how many other people did you see during your most recent visit to the Rattlesnake?

_____none	_____11-20
_____1-5	_____21-40
_____6-10	_____over 40

ABOUT YOUR VISIT

9. Each person has many individual reasons for visiting the Rattlesnake. Below is a list of reasons given by recreationists for their visits. Try to recall how important each of the following reasons was to you in your most recent visit to the Rattlesnake area.

I visit the Rattlesnake for the opportunity:	not at all important	slightly important	somewhat important	moderately important	very important	extremely important
to observe the scenic beauty	( )	( )	( )	( )	( )	( )
so I can be with friends	( )	( )	( )	( )	( )	( )
so I can take in some natural surroundings	( )	( )	( )	( )	( )	( )
to develop my skills and ability	( )	( )	( )	( )	( )	( )
for the adventure	( )	( )	( )	( )	( )	( )
to improve my physical health	( )	( )	( )	( )	( )	( )
so I could do things with my companions	( )	( )	( )	( )	( )	( )
to enjoy the smells & sounds of nature	( )	( )	( )	( )	( )	( )
to get away from some of the expectations people have of me back home	( )	( )	( )	( )	( )	( )
because I thought it would be a challenge	( )	( )	( )	( )	( )	( )
to get away from other people	( )	( )	( )	( )	( )	( )
because something exciting is always happening here	( )	( )	( )	( )	( )	( )

to understand the natural world better	( )	( )	( )	( )	( )	( )
so my mind could move at a slower pace	( )	( )	( )	( )	( )	( )
to have fun	( )	( )	( )	( )	( )	( )
to learn more about nature	( )	( )	( )	( )	( )	( )
for the solitude	( )	( )	( )	( )	( )	( )
to help reduce or release some built-up tensions	( )	( )	( )	( )	( )	( )
to be with others who enjoy the same things I do	( )	( )	( )	( )	( )	( )
to help keep me in shape	( )	( )	( )	( )	( )	( )
so I could become better at it	( )	( )	( )	( )	( )	( )

10. Listed below are a number of factors which people usually encounter during an outdoor recreation trip. For each factor, please check whether it contributed to a feeling of satisfaction or dissatisfaction. If the factor did not affect you one way or the other, please check "neither".

Factor	Was it a source of satisfaction?	Was it a source of dissatisfaction?	Neither
Trails	_____	_____	_____
Weather	_____	_____	_____
Insects	_____	_____	_____
Recreation Equipment	_____	_____	_____
Management of area	_____	_____	_____
Scenery	_____	_____	_____
Litter	_____	_____	_____
Meeting or seeing other similar recreationists	_____	_____	_____
Meeting or seeing other types of recreationists	_____	_____	_____
Dogs	_____	_____	_____
Wildlife	_____	_____	_____
Lakes	_____	_____	_____
Streams	_____	_____	_____

11. We are interested in how satisfied you were with your recent visit to the Rattlesnake. Were there any times you felt particularly good about your visit?

_____Yes. Could you briefly describe why?_____

_____

_____

_____No.

12. Were there any times you felt particularly bad about your visit?

_____Yes. Could you briefly describe why?_____

_____

_____

_____No.

13. Listed below are another group of factors which concern how your visit was organized and carried out. Please indicate whether each factor gave you a feeling of satisfaction, dissatisfaction, or had no effect either way.

Factor	Was it a source of satisfaction?	Was it a source of dissatisfaction?	Neither
People I traveled with			
The group leader			
Responsibilities I had on trip			
The activity itself			
Improving activity skill level			
Personal physical condition			
The route our group took			

14. We would like to know the "high" and "low" points of your recent visit.

a. What did you personally enjoy most?

_____

_____

b. What did you personally enjoy least?

_____

_____

15. Finally, overall, how would you rate your visit?

_____poor

_____fair, it just didn't work out very well

_____good, but I wish a number of things could have been different

_____very good, but could have been better

_____excellent, only minor problems

_____perfect

16. Do you have suggestions about how the Rattlesnake could be managed in order to improve future trips?

_____

_____

17. Are there any different ways which you would organize future trips into the Rattlesnake to improve your experience?

_____

_____

Background Information

Finally, we have a few questions about you personally which provide information useful in management. Remember, you will not be identified with your answers, so please be frank.

18. What is your present age?_____

19. Are you female?_____male?_____(check one)

20. What best describes the area in which you live?

_____metropolitan area, over 250,000 people

_____urban area, 25,000 to 250,000 people

_____city, 10,000 to 25,000 people

_____town under 10,000 people

_____rural

21. What is the highest level of education you have completed so far? (circle one number)

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 16+
elementary high school college

22. What is your occupation? (Please indicate what kind of work you do, not for whom you work. If you are a homemaker, student, or retired, please so indicate.)

_____

_____

23. Do you have any additional comments or suggestions on how to improve the management of the Rattlesnake area? Any general comments?

_____

_____

_____

_____

PLEASE PLACE YOUR COMPLETED QUESTIONNAIRE IN THE STAMPED, SELF-ADDRESSED ENVELOPE PROVIDED AND DROP IN ANY CONVENIENT MAILBOX.

THANK YOU FOR YOUR HELP.
School of Forestry
University of Montana

Is there anything else you would like to say about the questions or topics raised in this questionnaire? Any comment or criticism will be appreciated.

THANK YOU FOR HELPING US TO CONDUCT THIS SURVEY. IF YOU WISH TO RECEIVE A SUMMARY OF THE RESULTS, PLEASE PRINT YOUR NAME AND ADDRESS ON THE BACK OF THE RETURN ENVELOPE (Not on this questionnaire) AND WE WILL SEE THAT YOU GET IT.

APPENDIX E: SAMPLING PLAN

Appendix E. Sampling Plan.

August Questionnaire Sampling

S	M	T	W	Th	F	S
						1 8-12
2 4-8	3	4	5	6	7	8 12-4
9 8-12	10 8-12	11 8-12	12	13 12-4	14 12-4 4-8	15 12-4
16 12-4	17	18 12-4	19	20 4-8	21	22 12-4
23 4-8	24	25	26 4-8	27 8-12	28 8-12	29 4-8
30 8-12	31					

Appendix E. Sampling Plan.

September Questionnaire Sampling

S	M	T	W	Th	F	S
		1	2	3	4	5
6	7 12-4	8	9	10	11 12-4	12
13	14	15	16	17	18 12-4	19
20	21	22	23	24	25	26
27	28	29	30			

APPENDIX F: COVER AND FOLLOWUP LETTERS

University of Montana
Missoula, Montana 59812
School of Forestry

Dear Visitor:

As you may know, the School of Forestry at the University of Montana is cooperating with the U.S. Forest Service in a study of the Rattlesnake National Recreation Area and Wilderness.

Our study involves a look at visitor use patterns -- where people travel in the area and how many -- as well as an investigation of recreational experience satisfaction. You have been randomly selected for participation in this study and we certainly appreciate your gracious cooperation.

Attached is a questionnaire which will take about 10-15 minutes to complete. Your responses will not only help us in our work, but may also be used in making overall decisions concerning the future of the Rattlesnake National Recreation Area and Wilderness. Please be assured that your responses will be tabulated in such a manner that no one individual can be identified. After you have completed the questionnaire, enclose it in the postpaid envelope and drop it in any convenient mailbox.

If you have any questions concerning this study, please contact us.

Sincerely,

Stephen F. McCool

STEPHEN F. McCOOL
Associate Professor

ADRIENNE M. CORTI
Research Assistant

SFMc:jc
Enclosure

Equal Opportunity in Education and Employment

University of Montana
Missoula, Montana 59812

Dear Visitor:

Several weeks ago we sought your cooperation in a study of visitors to the Rattlesnake National Recreation Area and Wilderness. As of this day, we have not yet received your completed questionnaire.

The study involves such questions as why people visit the Rattlesnake Area, how they feel it should be managed, what made their visit a satisfactory or unsatisfactory one, and the recreational activities visitors pursue during their trip. Because only a limited number of individuals have been included in the study, your cooperation is important to the success of it.

Enclosed is another copy of the questionnaire in the event you have misplaced the original. Please take a few minutes to complete the questionnaire within the next several days. Place it in the stamped, self-addressed envelope and drop in any convenient mail box. Your help is greatly appreciated.

Thank you.

Sincerely,

Stephen F. McCool

STEPHEN F. McCOOL
Associate Professor

Equal Opportunity in Education and Employment

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AUTHOR
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